The BLUE JAY

A JOURNAL OF NATURAL HISTORY AND CONSERVATION
FOR SASKATCHEWAN AND ADJACENT REGIONS

Vol. XXVIII, No. 2 Regina, Saskatchewan June, 1970

atbird

Photo by Harold Hosford

Published quarterly by the
SASKATCHEWAN NATURAL HISTORY SOCIETY
Regina, Saskatchewan

Europe's Conservation Year, 1970

Shortly after my arrival in France last January, the Council of Europe held a Conference in Strasbourg on the protection of the environment. Thus was launched Europe's Conservation Year, in which over 20 countries, from Iceland to Turkey, are participating. The Council is a consultative rather than a legislative body, but it unanimously supported the declaration that the protection of Europe's natural environment must have high priority in each government's national policy and budget. In addition, and as rapidly as possible, international standards must be established in the fight against the pollution of air, water and soil. The Conference charged the Council to add to the European Convention of the Rights of Man the right of everyone to a healthy and intact environment, to breathe air and drink water that are reasonably safe, not to submit to excessive noise, and to have reasonable access to the sea and countryside. "At Strasbourg", concluded the Conference president, "a window has been opened on a better future for man."

Concern over the accelerating destruction and pollution of man's environment could well be the most characteristic feature of the evolution of public opinion in the last decades of this century. An example of a thoughtful Conservation Year programme was described to me when I was in Northern Ireland at Easter where, paradoxically, headlines were being made by destructive rioting in Belfast. It was an extension course sponsored by the New University of Ulster and the Queen's University of Belfast on conservation in relation to the local environment. One lecture, for example, explored the ecological compatibility of the various uses made of Lough Neagh, the largest lake in Great Britain.

More than most nations, perhaps, the British have been aware of their natural environment as a precious heritage. British poets have traditionally celebrated the beauties of the countryside, and in April of this year Wordsworth's favourite walks in the Lake country were recalled in the bi-centennial celebration of his birth. Travellers to Britain are enchanted to find how much country landscape is still intact, and how many country customs are still alive. It is possible to have a ploughman's lunch in a village pub, and to join a group of bell ringers in the tower of a village church (as I did at Hayfield in Derbyshire) to watch them ring for a wedding or a morning service. Europeans understand that these patterns of life, like the old Norman church threatened by a new motorway, have their role to play in a meaningful environment. In the heart of the great city of Paris today, a fine job is being done in cleaning up and restoring the historic quarter of the Marais.

From this broad cultural meaning of the word "Conservation," we come back to its more limited sense as the wise use of man's natural environment. On the Canadian prairies we take natural surroundings and open space for granted. But these are luxuries in crowded parts of Europe. So it is reassuring to find that there are long sweeps of Normandy coast where one can walk alone on the sands, at least in winter. Or that up on the lonely Yorkshire moors in an early April snowstorm one can still feel shut off from the rest of the world. Or that one can spend an afternoon undisturbed watching migrant ducks and waders on the windswept tidal marshes of the Lune and Wyre River estuaries. All of these experiences I have had in Europe in this Conservation Year, and they make it seem overwhelmingly important that man's struggle to protect his environment should not fail.

Margaret Belcher,

Paris, April 1970.

THE BLUE JAY

Published quarterly by the Saskatchewan Natural History Society
Founded in 1942 by Isabel M. Priestly

Second class mail registration number 1046

Vol. XXVIII, No. 2 JUNE, 1970 Pages 61 - 104

TABLE OF CONTENTS

A PLACE FOR ECOLOGICAL CRITERIA IN CANADIAN POLITICAL ISSUES

A background paper prepared for the Western Canada Liberal Conference, Edmonton, Alberta, June 6, 7 and 8, 1970

by **Everett B. Peterson,** Environmental Sciences Centre, University of Calgary, Alberta

Ecological studies of the development and maintenance of life - supporting systems (ecosystems) have shown several parallels with the development of human society. In both pioneer ecosystems and pioneer societies, high birth rates, rapid growth, high productivity and economic profits, rapid exploitation of internally available nutrients or resources, and dependence on external sources or capital, nutrients or energy are characteristic and advantageous for development. But as the mature phase is reached there is a shift to symbiosis and more complex relationships: in ecosystems we see species population control, recycling of nutrients and material, competition, relative stability, and general self-sufficiency within the system; in societies we see development of laws, culture, education and complex economic relationships. Ecological theory suggests that when we are ready to advance from a young to a mature society in Canada we may have something to learn from nature's strategy in development from young to mature ecosystems. (E. P. Odum, 1969. *Science, 164,* pp 262-270).

Ecologists require the help of politicians to encourage public awareness of these fundamental concepts. It will be exceedingly difficult to convince participants of a consumer-oriented technology of the potential dangers in continued expansion of 'productive landscape' at the expense of 'protective landscape' before we have better ecological information on how far we can safely go in that trend. It will be equally difficult to introduce the idea that we may be producing more things than we need, more people than we need, and more environmental ills than we can cure. As a Canadian ecologist, I am disturbed that neither the public nor the private sector of our society yet sees the value of strong financial support for basic studies of the Canadian environment. Surely we could move more quickly to designate important ecosystems of our flora and fauna to serve as ecological research laboratories and as bank accounts of genetic diversity for uses not yet imagined by man. Surely public or private sources could provide enough financial support for ecological studies to eliminate situations as nationally embarrassing as, for example, that which finds a senior Canadian ecologist lacking the funds for publication of the monographs that would record half a lifetime's study of land-vegetation relationships. And surely it is time for us to question the wisdom of the practice wherein the private sector of our society has the right to manufacture goods while the public sector has the responsibility of disposing of the unused or worn-out portions of manufactured goods. If industrial genius can mass - assemble and mass - distribute, why cannot the same genius mass-collect, mass-disassemble, and massively re-use the materials?

The lack of a public consensus in the form of ecological awareness underlines the urgency of getting on with the job. However, I would add the optimistic observation that the large proportion of our population that is under 25 years of age needs little convincing in this direction: they already know that there are some environmental problems, and they already think ecologically. Therefore, the task is to devise educative, coercive, administrative and legal mechanisms that will enhance the ecological literacy of the

interest groups that politically represent agriculture, the construction industry, and the extractive natural resource industries. Because such an educative process may require more time than we have available for implementation of better practices in ecosystem management, we should search for even more expedient measures. The possibilities for action depend upon the conceptualization of environmental goals and of related public responsibilities at the most influential levels of public office. If a political awareness were accompanied by developments of innovative legal controls that were based on relevant ecological criteria, interests that have historically acted less than responsibly towards environment and natural resources could be influenced, in a relatively short time, to think ecologically.

To promote wiser use and care of Canada's environmental heritage, three specific steps are recommended:

I. The current Justice Minister's concept of 'Citizens Bills', designed to support the rights of each citizen, should be extended by adoption of a constitutionally embedded 'Environmental Bill of Rights' from which the necessary legal authority could flow. The broad objective would be to recognize and protect the rights of every person to a decent environment. The 1969 action by the Supreme Court of Canada in using the 1960 Bill of Rights to overrule other federal legislation lends encouragement that a precedent would be available for a Bill of Rights that included environmental considerations. Even if the present Canadian Bill of Rights is limited to those matters falling within federal jurisdiction, its expansion to include 'environmental rights' would set a good example for provincial jurisdictions.

II. Following from the excellent international example recently set by Canada with the Bill to protect the environment of the Arctic archipelago, the Government of Canada should now be taking steps to ensure major Canadian contribution to the 1972 United Nations Conference on the Human Environment. Furthermore, the Government of Canada should now make it clear to Canada's youth and to the organizers of the 1972 conference that any such meetings to develop strategy for environmental management cannot be held without participation of the heirs of our present environment. Youth represent a majority of the world's population and the youth of all nations must be full partners in planning, participating, and follow-up of the 1972 Stockholm meeting.

III. Political forces should provide assistance to other interested Canadians in the establishment of one or more centres for development of environmental law in Canada. The broad objective should be to provide an institutional setting from which ecological criteria for Canada's environmental goals could emanate and from which the legal and administrative means for achieving the desired environmental goals could evolve. The international nature of many environmental disorders and the profound ecological importance of the oceans for maintenance of planetary life dictate that such an endeavour could not dwell solely on municipal, regional or national environmental questions.

SNHS SUMMER MEET
WASKESIU
June 12, 13, 14, 1970

This is our first summer meeting in a national park where assistance with tours and lectures is available from park naturalists.

Registration ($1.00) is in the Community Hall where films will be shown at 8 p.m. Friday evening. Full details on the program will be available upon registration. Saturday events start with birding from the Nature Center at 6:30 a.m.

Accommodation is available in Waskesiu motels, cabins, trailer court and campgrounds.

Everyone welcome!

PRINCE ALBERT NATIONAL PARK*

Prince Albert National Park occupies 1,496 square miles of land and water in central Saskatchewan. The table which follows indicates distances in miles from Waskesiu Townsite in the Park to the Trans-Canada Highway and to major Saskatchewan centres.

Location	Miles
Prince Albert	60
Saskatoon	163
North Battleford	192
Regina	287
Moose Jaw	280
Swift Current	335
Trans-Canada Highway	280

The vegetative cover of the Park is classified as lying within the boreal forest, but of significance is the occurrence of remnants of true prairie and aspen parkland in association with the boreal forest (due primarily to the peripheral location of the Park within the boreal forest zone). Faunal species typically found in each of these plant communities are found here as well. Elk, moose, deer, black bear, wolf, coyote, lynx, fox, badger, beaver and a number of other mammals find refuge in the Park; migratory birds and an occasional woodland caribou inhabit the Park seasonally.

The northern half of the Park, which lies within the Churchill River Watershed, is characterized by a few large lakes, numerous smaller but relatively deep lakes, and a few bogs and streams.

The southern half of the Park, part of the North Saskatchewan River Watershed, is characterized by numerous small sloughs (some of which are slightly alkaline), a few small lakes, and two geologically-old meandering streams.

Public use of this Park has been concentrated in the Churchill Watershed portion due primarily to the presence of: larger and deeper lakes, quantity and quality of beaches, better fishing better boating opportunities.

Topographically, the lands within the Park have a general undulation with a general elevation of 1,800 fee above sea level. These undulations ar very slight in the south-west an north-east corners of the Park, and ar

*The information for this article, and the photographs were kindly sent to us by Mr. John I. Nicol, Director, National and Historic Parks Branch, Department of Indian Affairs and Northern Development, Ottawa. Mr. A. B. Douglas, M.P., had requested information on the P.A. National Park to mark our Summer Meeting at Waskesiu, June 12, 13, 14, 1970. We acknowledge their help with gratitude.

greatest around Delworth Hill, the highest point in the Park. A height of land which occurs immediately south of Waskesiu Lake and includes Delworth Hill forms a watershed divide between the Churchill River drainage to the north and the North Saskatchewan River drainage to the south.

Glacial sediments (largely till laid down over sedimentary rock of the Upper Cretaceous account for these undulations and vary considerably in depth. Only in a very few instances, however, does this soil mantle become thin enough to permit exposure of the underlying rock.

In general, these glacial sediments have been relatively stable as witnessed by the existing pattern of drainage (wide stream valleys and meandering streams), but where finer surface sediments have been cut by roads or game trails, they have been subject to immediate erosion.

Indicator plant species are extremely useful in determining soil capabilities in Prince Albert National Park, for they reflect not only vegetative capability but development capability as well. For example, pure stands of Jack pine *(Pinus banksiana)* are commonly found on sandy-gravelly soils which, in turn, can be used for construction purposes such as a source of fill material or as a satisfactory base for park developments. The aspen park land areas are characterized by relatively dry soils which, in combination with periodic fires and drought, are best suited to the growth of aspen and grasses rather than hard woods or soft woods of the next stage of natural succession. Poorly drained soils which would be more difficult to develop as roads or park facilities are indicated by wetland species such as speckled alder *(Alnus rugosa)*, sedges *(Carex* spp.*)* and black spruce *(Picea mariana)*.

Prince Albert National Park lies just within the sub-Arctic climatic region which the Atlas of Canada (1957) describes as having a "cool short summer, with only one to three months with a mean temperature above 50 degrees F."

Its peripheral location with respect to the southern limit of this climatic region enhances the Park environment in that it offers a significant yet pleasant change in climate for visitors from other climatic regions.

Mean monthly temperatures range from 60-70° F. in July to –10 to –5° F. in January, but extremes which have been recorded can range from 100° to –60° F.

The Park lies within one of the dryer forested areas of the world, and receives on average annual precipitation of 14-18 inches, most of which falls during the growing season. Periodic droughts occur within the Park which give rise to hazardous forest fire conditions, and natural and man-caused fires often result.

Approximately one-half of the total daylight hours in the Park are bright sunshine, and this, combined with low rainfall, pleasant temperatures, and invigorating outdoor environments, makes ideal conditions for a National Park visit.

White Pelicans in P.A. Nat. Park

AQUATIC PARK PROPOSAL FOR LAKE WINNIPEGOSIS, KAWINAW AND PELICAN LAKES

By **Kees Vermeer,** Canadian Wildlife Service, Edmonton

In the summer of 1969, I surveyed colonies of White Pelicans, Double-crested Cormorants and Great Blue Herons by float plane in Manitoba. Lake Winnipegosis, Kawinaw and Pelican Lakes (Fig. 1) impressed me as having the richest avifauna for those species in the Canadian prairie provinces. Lake Winnipegosis, with 1,403 nests of Double-crested Cormorants (Vermeer, 1969a), has as many cormorants breeding there as in the provinces of Alberta (Vermeer, 1969b) and Saskatchewan (Vermeer, in press, a) combined. Great Blue Heron colonies were also observed to be more numerous at Lake Winnipegosis than at any other lake in the prairie provinces (Vermeer, 1969 c; 1970; and unpublished observations for Saskatchewan). Pelican Lake with 1,670 nests and Kawinaw Lake with 1,560 nests of White Pelicans in 1969 possess the second and third largest colonies for that species in Canada, while Lake Winnipegosis has a pelican colony with 410 nests (Vermeer, in prep.). Besides herons, pelicans, and cormorants, numerous colonies of California Gulls, Herring Gulls, Ring-billed Gulls, Caspian Terns and Common Terns breed on islands in these lakes. Many of the above species breed in association with one another. Figure 2, for example, shows an island in Kawinaw Lake, where Ring-billed Gulls, Common Terns, White Pelicans, and Double-crested Cormorants nest on the ground, where Great Blue Herons nest in trees and where many Western Grebes nest in the marshy areas of the island. Canada Geese and White-winged Scoters also breed on that island.

Fig. 1 Lake Winnipegosis, Kawinaw and Pelican lakes, Manitoba

Pelican and cormorant colonies have been declining in number in the prairie provinces, apparently because of human disturbance (Vermeer, 1969a; 1969b; in press; in prep.). Protection is urged for at least the major breeding colonies at Pelican and Kawinaw lakes. It is especially urgent for the latter as a new road, number 327, between highway number 6 and Easterville, provides easy access for the launching of power boats. Invasion by boats and frequent visits to the colony will cause the birds to leave their eggs which then become susceptible to extensive predation by Herring Gulls which nest on another island in that lake. It is only a matter of time before bird colonies at Pelican Lake and Lake Winnipegosis will be accessible to many tourists. Drent and Guiguet (1961:123), in a plea for protection of sea-bird colonies along the British Columbia Coast, state in this

context: "A new form of disturbance is now making itself felt, however, and has already reversed the trend of increase at several colonies. This threat is 'misguided tourism'. The post-war craze for small motor boats, especially ever speedier outboard models, has filled south coast waters with swarms of whining 'sharks' that penetrate every channel. Formerly small boating was confined to relatively slow inboards, and fishing was the primary objective. Now, however, a new class of boat enthusiasts is involved, with often no goal in mind other than to cover distance at speed, landing on islets here or there to break the monotony of travel. The result has been an ever-increasing disturbance of the more accessible colonies. Those with definitely malicious intent are few; the damage is caused by curious but well-meaning folk."

This unique lake region of Manitoba should be set aside as a federal or provincial aquatic park in which islands with bird colonies could be protected by inhibiting landing on them during the breeding season. Some of the larger islands could be provided with camping facilities for boaters. Boats with outboard motors could be restricted to areas where nesting colonies would not be affected adversely and where boaters would not interfere with the enjoyment of naturalists, swimmers, sailors, canoeists and others who prefer more quiet, natural surroundings.

LITERATURE CITED

Drent, R. H., and C. J. Guiguet. 1961. A catalogue of British Columbia sea-bird colonies. Occasional papers of the British Columbia Provincial Museum, No. 12, Provincial Museum, Victoria, 173 pp.

Vermeer, K. 1969a. The present status of Double-crested Cormorant colonies in Manitoba. Blue Jay, 27:217-220.

Vermeer, K. 1969b. Colonies of Double-crested Cormorants and White Pelicans in Alberta. Canadian Field-Naturalist, 83:36-39.

Vermeer, K. 1969c. Great Blue Heron colonies in Alberta. Canadian Field-Naturalist, 83: 237-242.

Vermeer, K. 1970. Insular Great Blue Heron colonies on large Manitoba lakes. Blue Jay, 28:84-86.

Vermeer, K. Colonies of Double-crested Cormorants and White Pelicans in Saskatchewan. Canadian Field-Naturalist, in press.

Vermeer, K. Distribution and size of White Pelican colonies in Canada, in prep.

Fig. 2. Aerial photo of island in Kawinaw Lake with nesting colonies of pelicans, cormorants, gulls, terns, herons and grebes.

CASPIAN TERNS NESTING NEAR SPRUCE ISLAND, LAKE WINNIPEGOSIS, MANITOBA

by **Roger M. Evans, David B. Krindle,** and **Mark E. Mattson,** Department of Zoology, University of Manitoba, Winnipeg, Canada.

A breeding colony of Caspian Terns *(Hydroprogne caspia)* was first reported in Manitoba "on a small shoal in a remote part of Lake Winnipeg" (Dunlop, 1915:500). O'Donoghue and Gowanlock (1919) subsequently reported a breeding colony of this species near Berens Island in Lake Winnipeg, and McLeod and Bondar (1953:6) found "many Caspian Tern nests" present on Vance's Reef, a gravel and boulder reef about 100 by 15 yards in size located in Dawson Bay in the northwest portion of Lake Winnipegosis. A breeding record of Caspian Terns at Gods Lake, Manitoba, has also been established, on the basis of eggs lodged at the Little Northern Museum, The Pas, Manitoba (personal corres., S. Waller and W. E. Godfrey). Both Bent (1921) and Godfrey (1966) have listed this species as breeding on Lake Winnipeg and Lake Winnipegosis. As part of a more general study of gulls and terns, we visited portions of Lake Winnipegosis in 1968 and 1969 in an attempt to obtain additional information about the breeding status and biology of Caspian Terns in this region.

In early June of 1968 and 1969, using a 16-foot fibreglass boat, we investigated the northwest portion of Lake Winnipegosis, including the west shore and southeast portion of Dawson Bay, the reefs bordering Rowan Island, and Overflow Bay. These areas were found to contain colonies of Ring-billed Gulls *(Larus delawarensis)*, Herring Gulls *(L. argentatus)*, California Gulls *(L. californicus)*, Common Terns *(Sterna hirundo)*, Double-crested Cormorants *(Phalacrocorax auritus)* and, in the trees on Rowan Island, Great Blue Herons *(Ardea herodias)*, but observations of Caspian Terns were limited to occasional glimpses of flying birds. On June 14, 1969, acting on a suggestion of commercial fishermen operating in Dawson Bay, we went some 20 miles east of our camp at Overflowing River, along the north shore of the lake, to a reef lying approximately one mile to the east of Spruce Island, where nests of several of the above-listed species were found, as well as 310 nests of the Caspian Tern.

The reef used as a breeding site by the Caspian Terns appeared to be that referred to as the "reef east of Spruce Isl." by Vermeer (1969), and previously called "Goodman Island Reef" by McLeod and Bondar (1953), who described it as "a high, narrow reef about 600 yards long by a maximum width of 50 yards . . . densely grown over with nettles and ragweed" (loc. cit., p. 6-7). The reef was less densely vegetated when we arrived in 1969 (Figure 1). In 1945, when Goodman Island Reef was visited by McLeod and Bondar, it contained a nesting area that they considered adequate for up to 1500 Double-crested Cormorant nests, but although guano deposits on the boulders indicated it had been used by that species in the past, no Cormorants were present at the time of their visit, nor were any noted in 1950 and 1951 when they surveyed the same reef from the air. These authors made no mention of other nesting birds on the reef, although they did record that on another reef, lying approximately three miles to the southeast, Double-crested Cormorants were abundant, and nesting terns, gulls and pelicans *(Pelecanus erythrorhynchos)* were present and increasing in numbers between 1943 and 1951. Vermeer (1969) reported 645 cormorant nests on the reef east of Spruce Island at the time of his visit in 1969.

When we visited Goodman Island Reef, on June 14, 1969, breeding birds were abundant (Figure 2), and nest-

Fig. 1. Sparsely vegetated upper portions of reef containing Caspian Tern colony, near Spruce Island, Lake Winnipegosis.

ing areas covered up to an estimated 70 per cent of the available land surface. Caspian Terns, whose nests were only one to two meters apart, occupied three small areas of coarse sand and sparse vegetation on the north half of the reef. In addition to Caspian Terns, 307 White Pelican nests and 591 Double-crested Cormorant nests were counted, primarily along the sparsely vegetated higher portions of the reef. A small proportion of the Cormorant nests was located in a stand of dead trees that was present along the west shore of the south end of the island (Figure 1). Three Herring Gull nests were found near the middle of the reef, and Common Terns, which we estimated at approximately 200 pairs, occupied portions of bare sand and gravel at the periphery of the north and south ends of the reef. One hundred and twenty-four Ring-billed Gull nests, in numerous small clusters, were scattered along the length of the reef, primarily in stands of nettles. Although nest clusters of these various species tended to be partially separated from those of other species, mixed clusters were common, especially between pelicans and cormorants and, to a lesser extent, in regions of overlap, between Ring-billed Gulls, Caspian Terns, and Common Terns. In all cases where nests of different species were adjacent to each other, spacing between nests appeared to be typical for the species involved, thus suggesting the occurrence of spacing by interspecific territorial behaviour, a phenomenon previously reported, for example, in mixed colonies of Ring-billed, Herring, and California gulls at Dog Lake, Manitoba, by Moynihan (1956).

The three separate clusters of Caspian Tern nests contained 66, 100, and 144 nests respectively. As indicated in Table 1, the most common clutch size was two eggs (69 per cent of all nests), although single egg clutches were also common. Only seven nests, all in the largest cluster of nests, contained three eggs. According to the

Table 1. Nest contents of three Caspian Tern colonies located on Goodman Island Reef, near Spruce Island, Lake Winnipegosis, Manitoba, on June 14, 1969.

Colony	one-egg clutches	two-egg clutches	three-egg clutches	total nests	percent two-egg clutches
A	17	49	..	66	74%
B	34	66	..	100	66%
C	38	99	7	144	69%
Total	89	214	7	310	69%

Fig. 2. Upflight of breeding birds as we approached Caspian Tern breeding colony near Spruce Island, Lake Winnipegosis.

information in Bent (1921: 206), two-egg clutches are the most common for this species in southern colonies, but clutches of three are more common in northern colonies, such as in Lake Michigan, where three-egg clutches may prevail. Our observations suggest that a clutch size of two is the most common as far north as the north end of Lake Winnipegosis, and that at that latitude, three-egg clutches are rare. O'Donoghue and Gowanlock (1919) also reported that the most common clutch size was two eggs in the colony they observed near Berens Island, Lake Winnipeg. The breeding season was well advanced when we visited Goodman Island Reef on June 14, hence it is unlikely that the majority of the one or two-egg clutches were incomplete at that time.

The eggs of the Caspian Terns on Goodman Island Reef were similar in size to those of Ring-billed Gulls, and in the absence of direct comparisons with the latter species might have posed difficulties of identification. As described above, however, differences in nesting habitat provided one difference between the two species, as did clutch size (Ring-billed Gull clutches on the reef contained predominantly the typical number of three eggs). In addition, as described in Bent (1921), the ground color of Caspian Tern eggs was slightly lighter in color, and the eggs contained considerably fewer and smaller spots compared to those of Ring-billed Gulls nesting adjacent to them. These differences appeared to correlate well with the differences in color and appearance of the nest substrate of the two species, the lighter eggs of the Caspian Terns blending well with the buff-colored sand at the nest site (Figure 3), while the darker and somewhat greenish tinted Ring-billed Gull eggs blended well with their nesting habitat of gravel covered with a growth of nettles.

On the day of our visit to Goodman Island Reef, one pipped Caspian Tern egg, presumably the first of the year, was present in the largest of the three nest clusters. In the hope of obtaining information on the development of behaviour in this species, we took the single pipped egg back to our camp at Overflowing River. Despite a three-hour boat trip in cool weather and choppy water, it hatched in our laboratory incubator at 11:35 p.m. of the same day. The onset of hatching for this colony in 1969 can therefore be taken as either June 14 or June 15. Two newly hatched Ring-billed Gulls, no more than two days of age, were also found on the reef at the time of our visit, indicating a marked similarity in the timing of the breeding cycle of these two species. In the Caspian Tern colony visited by O'Donoghue and Gowanlock (1919) none of the eggs examined was less than one week from hatching on July 13, thus indicating a hatching time of at least one month to six weeks later than for the Goodman Island Reef colony in 1969.

The young Caspian Tern appeared to be healthy, thriving at first on a diet of fish fillets and cat food. By the end of a week, however, it refused to eat, and even with the help of force-feeding it failed to recover. Several observations of its food begging behaviour, obtained during the first few days after hatching, indicated a similarity to the observations of Arthur (*in* Bent, 1921: 207), who noted that when adult Caspian Terns arrived at the nest with fish for the young, the latter would "suddenly come to life, and, opening wide its little red beak, would chirp loudly . . . and rush about waving its little wing stumps . . . ."

In contrast to our laboratory-reared Ring-billed Gull chicks, which were able to peck and obtain food placed in a container on the cage floor as early as their first day after hatching, the young Caspian Tern was never observed to obtain food that was placed at a level below its head, even when attempts were made to attract its attention by waving food held in forceps back and forth in front of it. These results suggest a high degree of inflexibility in the feeding behaviour of the young terns compared to the more polyphagous gulls. This inflexibility in feeding behaviour was further indicated by the typical posture taken when food begging, at which times it would invariably stretch its neck out and upwards, thereby directing its open bill obliquely upwards, well above the level of its back. This posture, which under natural conditions presumably provides an efficient means of seizing fish brought to the nest by the parent (*see* Bent, 1921: 207), appeared to preclude the possibility of the young tern reaching down to obtain food from the bottom of the cage.

Fig. 3. One and two-egg clutches of light-colored Caspian Tern eggs in their shallow nests on bare sandy substrate. Colony near Spruce Island, Lake Winnipegosis, 1969.

The calls emitted by the young Caspian Tern when begging for food sounded similar to the harsh calls typical of the adults when we entered their colony. We are unable at this time to suggest an hypothesis as to the biological significance of the similarity between the calls of the adult and young Caspian Tern, beyond the obvious conclusion that they indicate an early development of adult-type calls. It is to be hoped that further investigations of the development of communication in this and related species may provide a basis for more complete interpretation of the limited observations set forth here.

Acknowledgements

The observations described in this report were obtained while conducting studies supported by the National Research Council of Canada, The Chapman Fund of the American Museum of Natural History, the Canadian National Sportsman's Shows, and the Northern Studies Committee, University of Manitoba.

LITERATURE CITED

Bent, A. C. 1921. Life histories of North American gulls and terns. Smithsonian Inst. U.S. Nat. Mus. Bull. 113. Reprinted by Dover, 1963. 337 pp.

Dunlop, E. B. 1915. Notes on some Manitoba birds. Auk, 32:500-501.

Godfrey, W. E. 1966. The birds of Canada. National Mus. of Canada Bull. No. 203, Biological Series No. 73. 428 pp.

McLeod, J. A., and G. F. Bondar. 1953. A brief study of the Double-crested Cormorant on Lake Winnipegosis. Can. Field-Nat. 67:1-11.

Moynihan, M. 1956. California Gulls and Herring Gulls breeding in the same colony. Auk, 73:453-454.

O'Donoghue, C. H., and J. N. Gowanlock. 1919. Notes on the Caspian Tern (Sterna caspia) and the Parasitic Jaeger (Stercorarius parasiticus) in Manitoba. Can. Field-Nat. 33:1-6.

Vermeer, K. 1969. The present status of Double-crested Cormorant colonies in Manitoba. Blue Jay, 27:217-220.

ADDITIONAL GREAT GRAY OWL RECORDS FOR MANITOBA AND ADJACENT MINNESOTA

By **Robert W. Nero,** Manitoba Museum of Man & Nature

A large influx of Great Gray Owls *(Strix nebulosa)* was reported for the 1968-69 winter season in southeastern Manitoba (*Blue Jay* 27, 191-209). The present note records some additional data in that connection and documents a minor influx for the winter of 1969-70.

A discussion of a reported influx in southern Manitoba for the winter of 1922-23 *(op. cit.)* overlooked supporting records at Grafton, North Dakota, 112 miles south of Winnipeg. Of three records for this species at Grafton during the period 1900-23, two are for the winter of 1922-23 (December-January) (H. V. Williams. 1926. Birds of the Red River Valley of northeastern North Dakota. *Wilson Bulletin,* 38:17-33, 91-110).

Another summer record, presumably outside the breeding range, has been reported for Sandy Hook on the southern end of Lake Winnipeg, about 40 miles north of Winnipeg. Mrs. A. Elliott reports (pers. corres., April 13, 1970) that one was seen on several occasions in that vicinity from June 22, 1969 into mid-July 1969.

Records for the fall and winter of 1969-70 are given in Table 1. The October 5 record at Makinak, just northeast of Riding Mountain National Park, is the second record for the park vicinity. John E. Mason, an active birder from Toronto, told me he saw this bird near a deciduous woodlet; it hooted a few times while being observed. Except for this record and a January 15 report for Duck Mountain Provincial Park, all records are for the southeastern corner of the province, from Pinawa south, the area in which most previous observations have been made. There are three main locations in which owls appeared this past winter: Pinawa-Seven Sisters, one or two birds; East Braintree-Richer, two

Table 1. Great Gray Owls records, 1969-70

October	5	1 seen	Makinak (3 mi. SW)	J. E. Mason
December	1	1 captured and released	East Braintree (3 mi. NE)	G. M. Hornick
"	7	1 seen	Richer (8 mi. SE)	Mr. and Mrs. A. F. Holloway
"	11	1 seen	East Braintree (3 mi. S)	M. Yaremchuk
"	28	1 seen	Pinawa (6 mi. W)	J. A. Frederich
January	2	1 seen	Richer (10 mi. SE)	M. J. Majure
"	15	1 seen	Duck Mt. (junc. no's 366 & 367)	J. D. Robertson
"	18	1 seen	Seven Sisters Falls (5 mi. E)	B. Richter
February	7	1 seen	Pinawa vicinity	T. T. Vandergraaf
March	7	1 seen	Pinawa vicinity (same place)	T. T. Vandergraaf
April	1	8 seen	Sprague (7 mi. SW) (*in U.S.*)	Dr. H. T. Birks
"	2	1 seen	" (1 mi. N)	R. Kemp, L. Yarn
"	4	2 seen	" (14 mi. NE)	G. G. Graham
"	4	2 found dead	" (7 mi. SW) (*in U.S.*)	Dr. H. T. Dirks
"	5	1 seen	Anola (7 mi. E)	G. Cotter
"	7	1 seen	Sprague (7 mi. SW) (*in U.S.*)	R. Hobbs
"	9	1 seen	" " " " "	R. Hobbs
"	11	3 found dead	" " " " "	R. W. Nero
"	12	1 seen	" (1½ mi. W)	J. Urbanski
"	21	1 seen	East Braintree (5 mi. SW)	G. G. Graham

or three birds; and Sprague, probably a dozen or more birds.

The Great Gray Owl captured on December 1 was caught accidentally by one foot in a steel trap set for lynx. Its toes were frozen fast to the trap and in order to free the owl the trapper had to sever its foot. It flew up to a nearby tree and eventually flew away. The owl had stepped into one of several traps set in a circle beneath an overhanging carcass of a Ruffed Grouse, a set-up favoured by trappers for taking lynx. This provides somewhat indirect evidence that the Great Gray Owl will occasionally prey on grouse.

Judging by reports received from several sources, Great Gray Owls appeared in early March along the international border south of South Junction and Sprague (or, from the Minnesota point of view, north of Roseau and Warroad). A maximum count of eight was made by Dr. H. T. Dirks at about 9:00 or 10:00 a.m. on April 1 within two miles south of the U.S. customs station near South Junction. Dr. Dirks, upon returning to Canada on April 4 at mid-day, found two dead owls in the same area. One was known to have been struck by a truck that morning; the other appeared to have been shot. On April 11, I found three dead owls, and on May 2, two more, along this same stretch of road. At least four of these appeared to have been shot. Customs officer Ray Hobbs reported having seen three dead ones, each at the bottom of a telephone pole, during this period. Thus, at least six, and possibly one or more additional owls, were killed along this section of road. The road for a few miles south of the station is or was bordered by large tracts of black spruce. Loggers cutting spruce along this particular stretch of road in March and April were thought by Hobbs to have been shooting owls, in spite of his protests.

Another dead owl, presumably a road kill of this species, was reported near Middleboro, but we were unable to locate it. Other large, dark owls were reported by customs officers in the area east of Middleboro. Evidently some 12 or 15 birds were concentrated in this general area. The appearance of owls over a period of several weeks in a limited area along the roadway south of the U.S. customs station is similar to what has previously been reported for this species in Manitoba and Minnesota. It suggests that the Great Gray Owl travels and winters in loose flocks, possibly comprised of one or more family groups. The presence of a large number of owls in this area in March and April is surprising, considering the relatively low numbers reported in the region to the north where numerous persons have been alerted to watch for these owls. One wonders where these birds were prior to their appearance in this area.

The accidental loss of wintering Great Gray Owls can hardly be controlled, but shooting ought to be stopped. The occurrence of Great Gray Owls in suitable nesting habitat in southeastern Manitoba in late April suggests the possibility of their nesting here, but shooting probably eliminates them. The necessity for continued widespread efforts to acquaint the public with birds of prey, their values, and even the laws protecting them should be made clear to educators and conservationists. A new policy established recently by the Manitoba Department of Mines and Natural Resources is a further step in this direction. In Manitoba, from now on, according to department officials, it will be difficult for anyone not connected with an educational institution or conservation group to obtain a permit to have mounted and to possess a dead hawk or owl or any other bird that is protected by law. This commendable viewpoint should be recommended to resource departments in other provinces and states.

An active Great Gray Owl *nest* found in the Roseau, Minnesota area and verified by us on May 2, is firm evidence that Great Gray Owls can and will nest in this region. With adequate protection this interesting bird could possibly become a regular member of the avifauna of southeastern Manitoba.

THE BIRDS OF THE LAST MOUNTAIN LAKE WILDLIFE AREA, SASKATCHEWAN

by **Gary G. Anweiler,** Silton, Saskatchewan

The following briefly annotated list was prepared by Gary Anweiler and is based primarily on records collected by him between April 11 and October 27, 1969. During this period he was on contract with the Canadian Wildlife Service to collect natural history information for use at an interpretation centre scheduled to be built southeast of Simpson, Saskatchewan, within the next few years. The area investigated was approximately 3 miles wide and 12 miles long around the north end of Last Mountain Lake. (See Hatfield, J. P. 1969. The Last Mountain Lake Wildlife Area, Saskatchewan. Blue Jay 27:129-131.) It includes parts of Townships 27 and 28, Ranges 23 and 24, west of the 2nd Meridian. In the list, extreme dates of occurrence are given and, in some cases, peak migration dates. A date in parentheses is for a straggler. Locations given are usually those where the species was most commonly seen. Species marked with an asterisk are known to have bred in the area.

Information from other observers, mostly unpublished, is included and acknowledged (in parentheses). The publication referred to as "Todd" is W. E. C. Todd's Notes on the birds of southern Saskatchewan. Annals of the Carnegie Museum 30: 383-421. 1947. The late Mr. Todd and G. M. Sutton worked in the area with A. C. Lloyd of Davidson, Saskatchewan, in May and June, 1932. Species marked "Not recorded by Todd" are ones that Anweiler found breeding or as summer visitors in the area.—J. B. Gollop, C.W.S., Saskatoon.

COMMON LOON. Migrant, rare summer visitor. Open water of the lake. April 28-June 25.

*RED-NECKED GREBE. Uncommon summer resident. Marshy bays of Lake. Taylor's Bay, bay inside Perry's Point, Fingers. May 26 (Todd) - June 22.

*HORNED GREBE. Migrant, rare summer resident. Marshy bays of lake, sloughs. May 1 - September 22.

EARED GREBE. Uncommon summer resident. Bays of lake, large sloughs. May 29 - September 18 (Sugré).

*WESTERN GREBE. Common summer resident. Lake; especially in marshy bays. Taylor's Bay has a large breeding colony. May 4 - September 27.

*PIED-BILLED GREBE. Common summer resident. Marshy bays of lake, small deep marshes. Second Finger, Taylor's Bay. May 1 - September 28. Not recorded by Todd.

*WHITE PELICAN. Common summer visitor. Once bred (to 1954) but no longer does. Open water of lake, rocky islands. Island off Perry's Point. Dam at Ducks Unlimited project during last half of April. April 9 (Huggins) - October 26. Migration: April 14 - May 26; August 27 - September 30.

*DOUBLE-CRESTED CORMORANT. Common summer resident. Breed on island off Perry's Point. 12,000± noted leaving Finger on October 5, 1960 (Gollop). No concentration noted in 1969. April 23 - October 9.

GREAT BLUE HERON. Uncommon summer visitor. Reedy shore of the lake, Fingers shoreline near Watertown. April 11 - October 8 (one nest, Todd).

BLACK-CROWNED NIGHT HERON. Uncommon summer visitor. Deeper marshes, Taylor's Bay, lakeshore, etc. Especially at slough north of gravel pits. May 23 - September 29.

*AMERICAN BITTERN. Fairly common summer resident. Reedy marshes, sloughs. Second Finger—deep marshes southwest of Headquarters. April 29 - October 13.

WHISTLING SWAN. Common migrant, casual summer visitor. Spring: Flooded sloughs in farm land along west and northwest edge of management area, as well as on the lake. April 12 (Huggins) - May 11 (May 17). Large flight on May 3. Fall: Fingers and open water of lake. September 22 - October 27.

*CANADA GOOSE (Large). Uncommon summer resident. Lake, breeds on islands; Taylor's Bay. April 11 - September 27.

CANADA GOOSE (Small). Common spring migrant. Uncommon fall migrant. Spring. Rest on larger sloughs to west and northwest of management area; feeds in surrounding grain fields. Also found on lake in

island area east of Watertown. March 22 (Huggins) - May 11. 6000-8000 at peak. Fall: Found with other geese (see White-fronted Goose). August 18 (Huggins) - September 27.

WHITE-FRONTED GOOSE. Very common migrant, spring and fall. Spring: Occur with small Canada Geese. April 11 - May 12 (May 28). Fall: Found in the island area of the lake; going out in all directions to feed, dawn and dusk, in the grain fields. September 12 - October 18.

SNOW GOOSE. Uncommon migrant, commonest in the fall. Found with the other geese. April 17 - May 11; September 13 - October 13.

BLUE GOOSE. Very uncommon lake; going out in all directions to feed, migrant. Usually with Snow Geese. April 21-24; October 9-13.

ROSS' GOOSE. Uncommon fall migrant. With other geese. September 13 (Chopping) - 18.

*MALLARD. Abundant summer resident. All wet places. Concentration in Fingers, especially Second, from mid-August to end-September; 100,000 estimated during this time. March 22 (Huggins) - October 27 - freeze-up.

BLACK DUCK. Rare summer visitor. Marshy bays and Fingers. June 2 - September 26. Not recorded by Todd.

*GADWALL. Fairly common summer resident. Alkali Lake behind Watertown, marshes, sloughs, etc. April 14 - October 16.

*PINTAIL. Common summer resident. Weedy places, shallows of lake. 15,000 at peak. April 10 (Hatfield) - October 17.

*GREEN-WINGED TEAL. Common migrant; uncommon summer resident. Marshes, sloughs. April 14 - October 16. Common from: April 14-21; October 1-15.

*BLUE-WINGED TEAL. Common summer resident. Marshy shallows of lake. April 21 - October 6.

*AMERICAN WIDGEON. Common summer resident, common during migration. In April, in ponds and stubble fields, later in marshes especially on lake, alkali slough behind Watertown. April 11 - October 25.

*SHOVELER. Common summer resident. Sloughs and marshes; Fingers. April 13 - October 17.

*REDHEAD. Fairly common summer resident. Deeper marshes and bays of the lake. Wherever there is thick bulrush growth. Second Finger, etc. April 14 - October 16.

RING-NECKED DUCK. Uncommon migrant. Deep open marshes and bays. Second Finger. April 25 - May 4; late August - September 27 (Hatfield).

*CANVASBACK. Fairly common migrant; uncommon summer resident. Marshes and bays of lake during summer and fall; temporary sloughs in April. Second Finger. April 14 - October 16. Migration: April 14 - early May; September 1 - October 16.

*LESSER SCAUP. Very common in migration; fairly common summer resident. Deep marshes; bays and open water of the lake. During spring migration found on larger temporary sloughs, often in rafts of up to 1,000 birds. April 14 - October 25. Spring Migration: April 14 - mid-May.

COMMON GOLDENEYE. Uncommon migrant and rather rare summer visitor. Open water of the lake. April 15 - May 4 (June 10); September 19 - freeze-up.

BUFFLEHEAD. Fairly common migrant; very uncommon summer visitor. Open marshes and bays of the lake; larger sloughs. April 16 - October 25.

*WHITE-WINGED SCOTER. Not common summer resident. Open water of lake, especially near the islands; off beach at Watertown and south along shore to Taylor's Bay. Breed on islands. Large rafts of young (up to 74) noted on August 7 and 8. May 18 - September 27.

*RUDDY DUCK. Not common summer resident. Deep marshes, bays and fingers of lake. Second Finger. April 29 - October 16.

HOODED MERGANSER. Very uncommon migrant; rare summer visitor. Ducks Unlimited Project, marshes of lake. May 23 (Todd) October 10 (Hatfield).

COMMON MERGANSER. Uncommon migrant, open water of lake. April 19 - May 23.

RED-BREASTED MERGANSER. Fairly common migrant (Todd). Lake. May 24 (Todd) - June 5 (Todd). Not recorded in 1969.

SHARP-SHINNED HAWK. Uncommon migrant. Large shelterbelts, e.g. at Headquarters. April 12 - May 19; August 16 (?) - October 13.

COOPER'S HAWK. Rare migrant. August 25.

RED-TAILED HAWK. Common migrant; rare summer visitor. Migrations: April 11 - April 25; August 25 - October 16 (October 26).

*SWAINSON'S HAWK. Common summer resident. Prairie areas, etc. April 21 - September 24.

ROUGH-LEGGED HAWK. Uncommon migrant. April 12 - May 1; August 20 - September 13.

*FERRUGINOUS HAWK. Very rare summer resident. Wreford Pasture. June 21 (nest).

GOLDEN EAGLE. Rare migrant. October 5 (Gollop) - October 13.

BALD EAGLE. Very uncommon migrant. April 12-13; October 13.

*MARSH HAWK. Very common summer resident. April 11 - October 25.

OSPREY. Rare migrant. April 30.

PRAIRIE FALCON. Migrant (Todd). May 24 (Todd) - June 3 (Todd). Not recorded in 1969.

PEREGRINE FALCON. Uncommon migrant. Marshes, especially Fingers. April 27 - May 28 (Todd); September 22 - October 16.

PIGEON HAWK. Very uncommon migrant. In vicinity of water. April 26; September 4-19.

SPARROW HAWK. Common migrant. Roadsides, or power and telephone lines and poles. April 14 - May 10; July 30 - September 23.

GREATER PRAIRIE CHICKEN. Probably now extinct in this area.

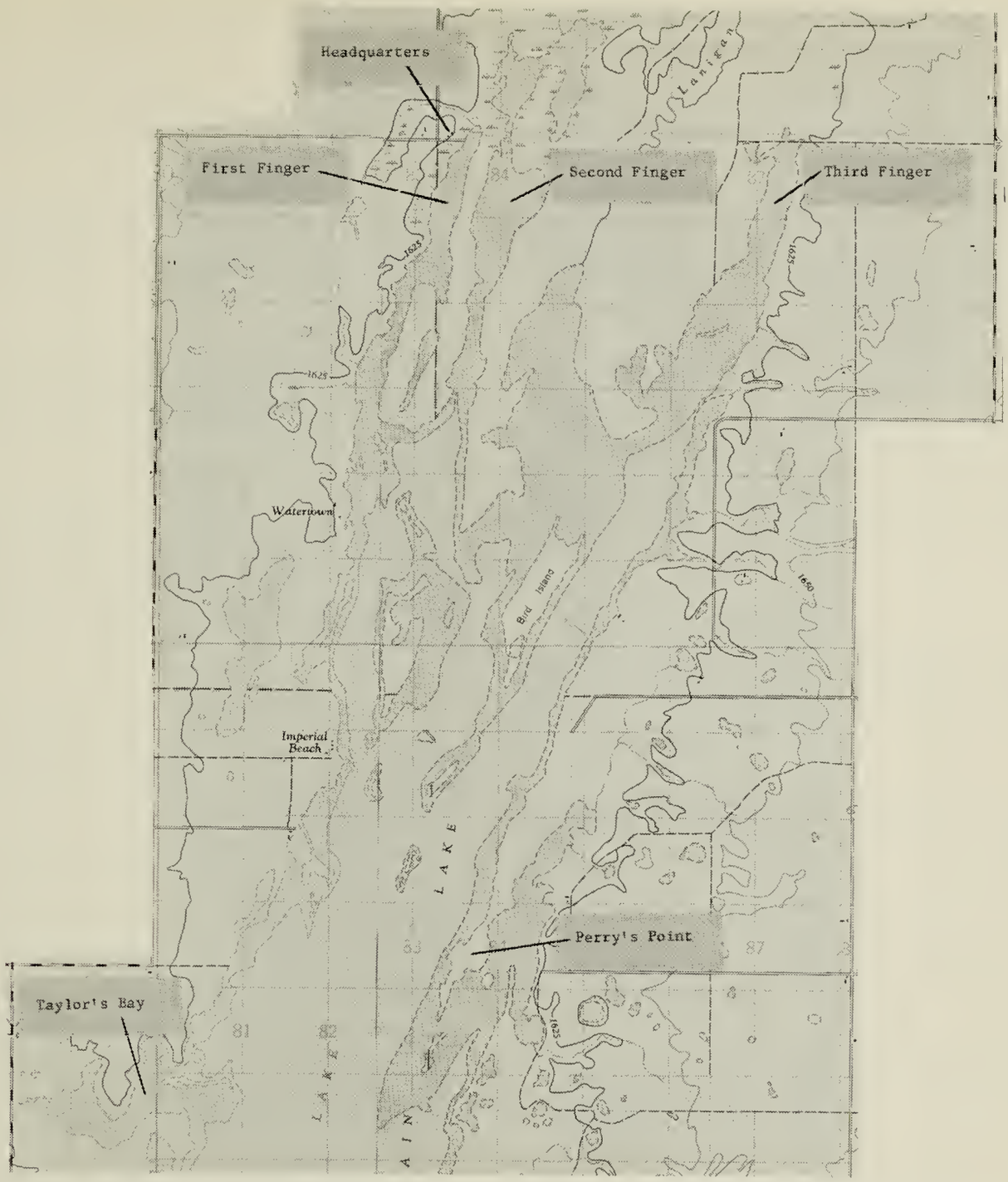
*SHARP-TAILED GROUSE. Fairly common resident. In fall, at dawn and dusk, in the stubble fields; during the day, in the willow swales. Prairie areas always good. April 25 - June 13 on dancing grounds. Broods June 21 - July 30.

*GRAY PARTRIDGE. Fairly common year-round resident. Old shelterbelts, especially near cultivated areas. Feed in grain; dawn and late afternoon. Not recorded by Todd.

WHOOPING CRANE. Rare, but regular migrant, rare summer visitor. Fingers, bays of lake. With Sandhills.

SANDHILL CRANE. Abundant migrant, rare summer visitor. During day in grain fields or prairies around

Sandhill Cranes in Last Mountain Lake Wildlife Area



Part of Last Mountain Lake Wildlife Area. For a description of the area and for a map showing its boundaries see J. P. Hatfield's article, *Blue Jay*, September 1969, pp 129-131.

lake. Spring: Mostly west of management area. Fall: Mostly on game preserve. April 9 (a farmer) - May 1; July 31 - October 30 (Stephens).

VIRGINIA RAIL. Rare summer resident. Marshes. June 12 - August 7.

*SORA. Fairly common summer resident. Marshes (southwest of Headquarters). May 11 - September 9.

YELLOW RAIL. Summer resident (Todd). Grassy marshes, head of lake. May 28 (Todd) - June 25 (Todd). Not recorded in 1969.

*AMERICAN COOT. Abundant summer resident. Found on all larger sloughs, marshes, and marshy areas of lake. Concentration noted on First Finger. Late August through September (5,000 ± here on September 20). April 22 - October 16.

SEMIPALMATED PLOVER. Uncommon migrant. Point ½ mile south of Imperial Beach. Alkali lake behind Watertown. May 23 (Todd) - August 25.

*PIPING PLOVER. Rare summer

resident. Alkali lake behind Watertown. June 2 (Todd) - July 17.

*KILLDEER. Uncommon summer resident. Usually found near water. April 11 - September 26.

AMERICAN GOLDEN PLOVER. Common spring migrant; rare fall migrant. Cultivated fields, especially those in fallow. May 17 - June 2; October 5 (Gollop).

BLACK-BELLIED PLOVER. Fairly common migrant, most common in spring. Beaches and mudflats. Point ½ mile south of Imperial Beach, alkali lake behind Watertown. May 23 - June 5 (Bard & Lahrman); July 1 - September 26.

RUDDY TURNSTONE. Uncommon migrant. Beaches, points, rocky islands. Watertown, point ½ mile south of Imperial Beach. May 22 (Todd) - June 22 (Todd); August 18 - 25.

COMMON SNIPE. Uncommon summer resident, slightly commoner in migration. Apparently breeding around springs, southeast of the gravel pit, possibly at head of Third Finger. In migration, along edge of Second Finger. April 24 - October 16. Not recorded by Todd.

WHIMBREL. Rare migrant. May 27 (Todd) - 30 (Todd). Not recorded in 1969.

*UPLAND PLOVER. Fairly common summer resident in prairie areas. Most common on flats between Second and Third Fingers. Also found in most pastures, especially those not overgrazed. Any prairie area. May 10 - August 11.

*SPOTTED SANDPIPER. Uncommon summer resident. Found on beaches, sandpoints and islands. Look for on Perry's Point, point ½ mile south of Imperial Beach and in the vicinity of Watertown. May 23 - August 25.

*WILLET. Common summer resident. Sloughs and marshy areas, lakeshore. Areas with a combination of prairie and water are most favourable. April 29 - September 12.

GREATER YELLOWLEGS. Fairly common in fall migration, rare in spring. Grassy and muddy shores. Along Fingers, Watertown, alkali lake behind Watertown. April 14 - May 18; July 3 - October 17.

LESSER YELLOWLEGS. Same as Greater Yellowlegs, but possibly slightly commoner. May 1-8; July 1 - October 3.

KNOT. Uncommon migrant. Beaches, sandpoints. Point ½ mile south of Imperial Beach. May 23 - June 7; August 2 and 4.

PECTORAL SANDPIPER. Uncommon migrant. Found along grassy or muddy shores. Alkali lake behind Watertown, lakeshore. May 14 (Todd)- June 24 (22) (Todd); July 17 - October 16.

WHITE-RUMPED SANDPIPER. Uncommon spring migrant. Alkali lake behind Watertown. May 16 (Todd) - June 23 (Todd).

BAIRD'S SANDPIPER. Same as Pectoral Sandpiper. Especially at head of Second Finger (?) June 4 (Todd) - June 22 (Todd); August 25 - October 6.

LEAST SANDPIPER. Fairly common migrant. Grassy or muddy shores. Alkali lake behind Watertown, area around point ½ mile south of Imperial Beach. May 14 (Todd) - June 11; July 1 - September 22.

SHORT-BILLED DOWITCHER and LONG-BILLED DOWITCHER. Common fall migrant, uncommon in spring. Muddy or grassy shallows. Especially around head of Second Finger. May 12 (Todd) - June 25 (Todd); July 1 - October 16; September 19 - October 16. I collected two long-billed Dowitchers on September 23; Todd (1947) presumed his 11 specimens to be Short-billed Dowitchers in 1932.

STILT SANDPIPER. Uncommon migrant. Muddy shores. Alkali lake behind Watertown. May 23 (Todd) - June 13 (Todd); August 1 - September 9.

SEMIPALMATED SANDPIPER. Fairly common migrant. Muddy shores, other shores. Especially at alkali lake

behind Watertown. May 22 (Todd) - June 11; June 27 (Todd) - August 1.

BUFF-BREASTED SANDPIPER. Migrant (Todd). May 23 (Todd)-28 (Todd). Not recorded in 1969.

*MARBLED GODWIT. Common summer resident. Found wherever there is prairie, especially near water, feeds along shores. April 28 - August 25.

SANDERLING. Uncommon migrant. Found on sandy beaches and points. Tip of Perry's Point, point ½ mile south of Imperial Beach. May 23 - June 22 (Todd) August 18-25.

*AMERICAN AVOCET. Uncommon summer resident. Two colonies found at large alkali sloughs. Fifteen pair on Hatfield road, just east of the east boundary, about six pair at alkali slough behind Watertown. May 12 - October 13.

*WILSON'S PHALAROPE. Fairly common summer resident. Grassy marsh edges, prairie shores. Especially along Second and Third Finger, Taylor's Bay. May 11 - August 10.

NORTHERN PHALAROPE. Fairly common migrant. Open water of large sloughs. Especially alkali lake behind Watertown. May 23 (Todd) - June 11; July 3; September 19 - October 3.

PARASITIC JAEGER. Accidental. October 28 (Bird, 1957).

HERRING GULL. Rare migrant and possible summer visitor. Along lake. May 16 (?) - 23.

*CALIFORNIA GULL. Uncommon summer resident. Around lake. Few breed in Ring-billed colony off end of Perry's Point. April 20 - July 3.

*RING-BILLED GULL. Abundant summer resident. Three colonies. April 11 - October 25.

FRANKLIN'S GULL. Abundant summer visitor. Probably breeds at Kutawagon Lake. Found commonest near lake. Roost at alkali lake behind Watertown, Taylor's Bay. April 12 - September 13.

BONAPARTE'S GULL. Uncommon migrant and summer visitor. Over open water of lake. May 23 - July 23. Not recorded by Todd.

*FORSTER'S TERN. Uncommon summer resident. A few bred off mouth of Lanigan Creek and possibly in Second Finger also. June 1 - July 20. Not recorded by Todd.

*COMMON TERN. Abundant summer resident. Open water and along shores of the lake. Breeds on three small islands. May 3 - September 1.

BLACK TERN. Common summer resident, probably breeds. Marshy bays of lake, lakeshore, Taylor's Bay, Fingers, south side of point ½ mile south of Imperial Beach. May 21 - September 9.

*ROCK DOVE. Fairly common resident. Found around abandoned buildings, in which they breed. Not recorded by Todd.

MOURNING DOVE. Uncommon summer resident, probably breeds. Found in the shelterbelts. April 23 - October 5.

*GREAT HORNED OWL. Uncommon resident year round. Aspen groves, shelterbelts.

SNOWY OWL. Uncommon migrant, probably winter visitor. To April 13.

*BURROWING OWL. Rare summer resident. Pastures. July 10 (nest).

*LONG-EARED OWL. Common summer resident. Found nesting in shelterbelts and aspen willow groves; also found in any treed place. April 11 - October 18.

*SHORT-EARED OWL. Common summer resident. Low prairie area, marsh edge, weedy fields. February 7 (Hatfield) - October 27.

COMMON NIGHTHAWK. Uncommon migrant. May 21 - June 6; August 20 - September 18.

RUBY-THROATED HUMMINGBIRD. Very uncommon migrant. Found in shelter-belts, gardens. May 27-28; August 18 - September 13. Not recorded by Todd.

BELTED KINGFISHER. Very uncommon migrant. Lakeshore, along Lanigan Creek. April 28 - May 23.

*YELLOW - SHAFTED FLICKER. Common summer resident. All treed areas, especially shelterbelts. April 14 - October 20.

YELLOW-BELLIED SAPSUCKER. Uncommon fall migrant. Treed places. September 29 - October 7.

HAIRY WOODPECKER. Same as Downy Woodpecker. October 26.

DOWNY WOODPECKER. Rare migrant, probably winter visitor. September 29.

*EASTERN KINGBIRD. Common summer resident. All treed and brushy places. May 15 - September 4.

*WESTERN KINGBIRD. Common summer resident. Shelterbelts, aspen groves. May 12 - August 28.

EASTERN PHOEBE. Rare spring migrant. April 16.

LEAST FLYCATCHER. Uncommon spring and rare fall migrant. Shelterbelts. May 15-29; August 27.

WESTERN WOOD PEWEE. Rare spring migrant. Shelterbelts. May 27 and 28.

*HORNED LARK. Common summer resident, abundant migrant. Prairie, cultivated fields, etc. Commonest where ground cover is light (e.g., over-grazed pasture, old fields). Area east of road to north boundary from Headquarters especially good. April 11 - October 18.

TREE SWALLOW. Fairly common migrant, rare summer resident. Shelterbelts, lakeshore. April 25 - September 12.

*BANK SWALLOW. Uncommon summer resident. Gravel pit on north boundary. In swallow flocks in fall. May 20 - September 11.

*BARN SWALLOW. Common summer resident. Anywhere there are buildings. April 26 - October 13.

CLIFF SWALLOW. Uncommon transient. May 18-30; August 7 - September 11.

PURPLE MARTIN. Rare transient. September 1.

BLUE JAY. Accidental visitor. May 29.

*BLACK-BILLED MAGPIE. Common resident. Shelterbelts.

*COMMON CROW. Common summer resident. Throughout, especially where trees. March 23 (Huggins) - October 13.

BLACK-CAPPED CHICKADEE. Winter visitor.

RED-BREASTED NUTHATCH. Uncommon migrant. Shelterbelts. May 11 - 16; August 25 - October 6.

BROWN CREEPER. Uncommon migrant (fall). September 30 - October 3.

*HOUSE WREN. Common resident. Shelterbelts, treed places. May 14 - September 19.

LONG - BILLED MARSH WREN. Rare summer resident. June 15 - October 9.

SHORT-BILLED MARSH WREN. Rare summer resident (Todd). Not recorded in 1969.

*CATBIRD. Rare summer resident. May 26 - June 28. Not recorded by Todd.

*BROWN THRASHER. Fairly common summer resident. Shelterbelts, aspen-willow groves, etc. May 5 - September 10.

AMERICAN ROBIN. Fairly common migrant. Shelterbelts, treed places, etc. April 11 - May 26; Augustt 25 - October 16.

HERMIT THRUSH. Fairly common migrant (fall). Shelterbelts, treed places. October 1-14.

SWAINSON'S THRUSH. Fairly common migrant. Shelterbelts, treed places. May 8 - June 2; September 10 - October 9.

GRAY-CHEEKED THRUSH. Fairly common migrant. Shelterbelts, treed places. May 8 - June 2; September 10 - October 9.

VEERY. Rare summer visitor. Shelterbelts. May 16 - July 9. Not recorded by Todd.

MOUNTAIN BLUEBIRD. Rare migrant. Roadsides. April 13 - May 3 (Hatfield).

TOWNSEND'S SOLITAIRE. Accidental summer visitor. September 24.

GOLDEN-CROWNED KINGLET. Uncommon migrant. Shelterbelts. April 30 (Todd); September 30 - October 19.

RUBY-CROWNED KINGLET. Uncommon migrant. Shelterbelts. May 15 and 16; September 10 - October 6.

*SPRAGUE'S PIPIT. Common summer resident. Dry prairie areas. April 22 - September 18.

BOHEMIAN WAXWING. Migrant, probably winter months. Shelterbelts. April 13 and 17.

CEDAR WAXWING. Fairly common migrant and summer visitor. Shelterbelts. May 28 - September 28.

NORTHERN SHRIKE. Winter visitor. Treed places, roadsides. March 24 (Hatfield); early October.

*LOGGERHEAD SHRIKE. Fairly common summer resident. Shelterbelts, roadsides, any treed place. April 27 - September 2.

*COMMON STARLING. Common summer resident. Shelterbelts. April 11 - October. Not recorded by Todd.

SOLITARY VIREO. Rare migrant. Shelterbelts. May 16.

RED-EYED VIREO. Uncommon migrant. Shelterbelts. May 27 - June 8.

PHILADELPHIA VIREO. Hypothetical (identification not positive). Shelterbelts.

WARBLING VIREO. Rare summer resident. Shelterbelts. May 25 - June 17.

BLACK-AND-WHITE WARBLER. Rare migrant. Shelterbelts. May 11 and September 11.

TENNESSEE WARBLER. Uncommon migrant and casual summer visitor. May 20-29; July 1-9; August 10-12 (?).

ORANGE-CROWNED WARBLER. Uncommon migrant. Shelterbelts. May 6-19; September 10 - October 6.

*YELLOW WARBLER. Common summer resident. Shelterbelts, any treed or brushy place. May 15 - September 17.

MYRTLE WARBLER. Common migrant. Shelterbelts, aspen-willow groves. April 25 - May 23 (Todd); August 25 - October 16.

BLACKPOLL WARBLER. Uncommon migrant. Shelterbelts. May 15-28; August 17.

PALM WARBLER. Very uncommon migrant (fall). Shelterbelts. September 10-22.

OVENBIRD. Rare migrant. Shelterbelts. May 15 - August 26.

MOURNING WARBLER. One trapped. September 10.

COMMON YELLOWTHROAT. Uncommon summer resident. Brushy marsh borders, shelterbelts, cattails. May 20 (Todd) - September 23.

WILSON'S WARBLER. Very uncommon migrant (fall). Shelterbelts. August 25 - September 17.

CANADA WARBLER. Rare migrant (fall). Shelterbelts. August 25 - September 10.

AMERICAN REDSTART. Two birds. May 27 and 28; September 21.

*HOUSE SPARROW: Fairly common resident. Occupies shelterbelts, old buildings (Headquarters). Not recorded by Todd.

BOBOLINK. Uncommon summer resident. Hay-meadows, slough borders. Along Lanigan Creek, especially lower end. May 19 - July 16.

*WESTERN MEADOWLARK. Common summer resident. Any area, roadsides are good. April 9 (Hatfield) - October 25.

*YELLOW-HEADED BLACKBIRD. Common summer resident. Deep marshes. April 24 - October 9.

*RED-WINGED BLACKBIRD. Common summer resident. Any slough. April 11 - October 26.

*BALTIMORE ORIOLE. Uncommon summer resident. Shelterbelts. May 19 - August 26.

RUSTY BLACKBIRD. Rare migrant. September 18 (Sugré).

*BREWER'S BLACKBIRD. Common summer resident. Shelterbelts. April 20 - October 9.

COMMON GRACKLE. Uncommon migrant, rare summer resident. Shelterbelts. April 14 - September 29.

*BROWN-HEADED COWBIRD. Common summer resident. Throughout. April 30 - August 25.

ROSE-BREASTED GROSBEAK. Uncommon migrant. Shelterbelts. May 16 and 19.

PINE GROSBEAK. Winter visitor. Shelterbelts. October 26.

COMMON REDPOLL. Winter visitor. Shelterbelts, weedy places. October 6 - April 11.

PINE SISKIN. Erratic (?) summer visitor. Shelterbelts, especially where spruce are present, such as at Headquarters. July 1 - October 8. Not recorded by Todd.

AMERICAN GOLDFINCH. Uncommon summer resident. Shelterbelts. May 19 - September 24.

WHITE-WINGED CROSSBILL. Uncommon and probably erratic visitor. Shelterbelts, especially where there are spruce. June 27 - October 14. Not recorded by Todd.

LARK BUNTING. June 2-15.

*SAVANNAH SPARROW. Common summer resident. Long grass, especially in moist places such as lakeshores and slough margins. April 23 - October 6.

*BAIRD'S SPARROW. Common summer resident. Dry prairie. May 3 - August 1. June 23 (nest, Todd).

LECONTE'S SPARROW. Fairly common summer resident. May 5 - Aug. 8.

*SHARP-TAILED SPARROW. Rare (?) summer resident. Around marshes. June 13, nest (Todd) - July 21.

*VESPER SPARROW. Fairly common summer resident. April 23 - October 1.

SLATE-COLORED JUNCO. Very common migrant. Wherever there are trees. April 11 - 28; September 12 - October 19.

TREE SPARROW. Abundant migrant. Brushy, weedy, and treed places. April 11 - 25; September 22 - October 27.

CHIPPING SPARROW. Fairly common migrant, rare summer visitor. Shelterbelts, treed places. May 6 - 28; July 15 - 21; September 11 - 12.

*CLAY - COLORED SPARROW. Common summer resident. Bushy or treed areas. Snowberry patches on prairie. Headquarters. May 4 - September 19.

HARRIS'S SPARROW. Fairly common migrant. Treed places. May 7-15; September 10 - October 15.

WHITE - CROWNED SPARROW. Same as above. April 25 - May 16; September 12 - October 13.

WHITE-THROATED SPARROW. Common migrant. Treed places. April 30 - May18; September10 - October 16.

FOX SPARROW. Uncommon migrant. Treed areas. May 1; September 30 - October 10.

LINCOLN'S SPARROW. Uncommon migrant. Treed places. May 4-16; September 11 - October 6.

SWAMP SPARROW. Same as above. May 19; September 20 - October 6.

SONG SPARROW. Uncommon migrant, rare summer resident. Shelterbelts. April 11 - July 9.

McCOWN'S LONGSPUR. Local summer resident (Todd). Not recorded in 1969.

LAPLAND LONGSPUR. Abundant migrant. Any cultivated field. April 11 - May 24; September 9 - October 24.

*CHESTNUT - COLLARED LONGSPUR. Common summer resident. Dry prairie, grazed pasture. Along trail between Second and Third Fingers, from north boundary. April 11-July 19.

SNOW BUNTING. Migrant and winter visitor. Cultivated fields; with longspurs in spring. April 11-28; October 5 (Gollop) - 24.

REFERENCES

Bard, Fred G. and Fred W. Lahrman. 1969. Some observations of the Knot on Old Wives and Last Mountain Lakes. Blue Jay, 27:210.

Bird, C. D. 1957. The Parasitic Jaegar in Saskatchewan. Can. Field-Naturalist, 71-37.

Chopping, George. 1961. Ross' Geese at Last Mountain Lake. Blue Jay, 19:165.

Hatfield, John P. 1969. Unpublished field notes kept by Manager of Last Mountain Wildlife Area.

Huggins. ca. 1927-1931. Unpublished records kept by him while Game Guardian in the area.

Gollop, J. B. 1960. Unpublished field notes in C.W.S. files.

Stephens, W. J. D. 1967. Bionomics of the Sandhill Crane. C.W.S. Special Report Series - No. 2. Queen's Printer, Ottawa.

Sugré. ca. 1917. Letter to Munro in C.W.S. files.

Todd, W. E. C. 1947. Notes on the birds of southern Saskatchewan. Annals of the Carnegie Museum 30:383-421.

Photo by Al Grass, Manning Park

Common Bushtit nest, photographed near Ladner, B.C., May 1969. Nesting materials included mosses, twigs, spider webbing, grass and tissue paper. The nest was built in a hawthorn bush.

INSULAR GREAT BLUE HERON COLONIES ON LARGE MANITOBA LAKES

by **Kees Vermeer,** Canadian Wildlife Service, Edmonton

Island colonies of Great Blue Herons *(Ardea herodias)* were surveyed by float plane on large lakes (Fig. 1) in Manitoba in 1969. A few colonies may have been missed as the survey was not exhaustive.

The numbered colonies in Fig. 1 are identified in Table 1. Most of the heron colonies were found on islands in Lake Winnipegosis and adjacent lakes. The scarcity or absence of insular heronries in Lake Winnipeg may be related to the fact that the heron acquires its prey in marshes and shallow bays of which fewer were observed in Lake Winnipeg than in Lake Winnipegosis and Lake Manitoba.

The mean heronry size consisted of 57 nests and ranged from 3 to 170 nests. This is a significantly higher average ($p < 0.01$) than that observed in heronries in Alberta in 1967, where the mean colony size was 21.3 and ranged from 1 to 55 nests (Vermeer, K. Can. Field-Nat., 83:237-242, 1969). Perhaps feeding conditions for herons at Lake Winnipegosis and adjacent lakes are more favourable than in Alberta.

The majority of nesting colonies

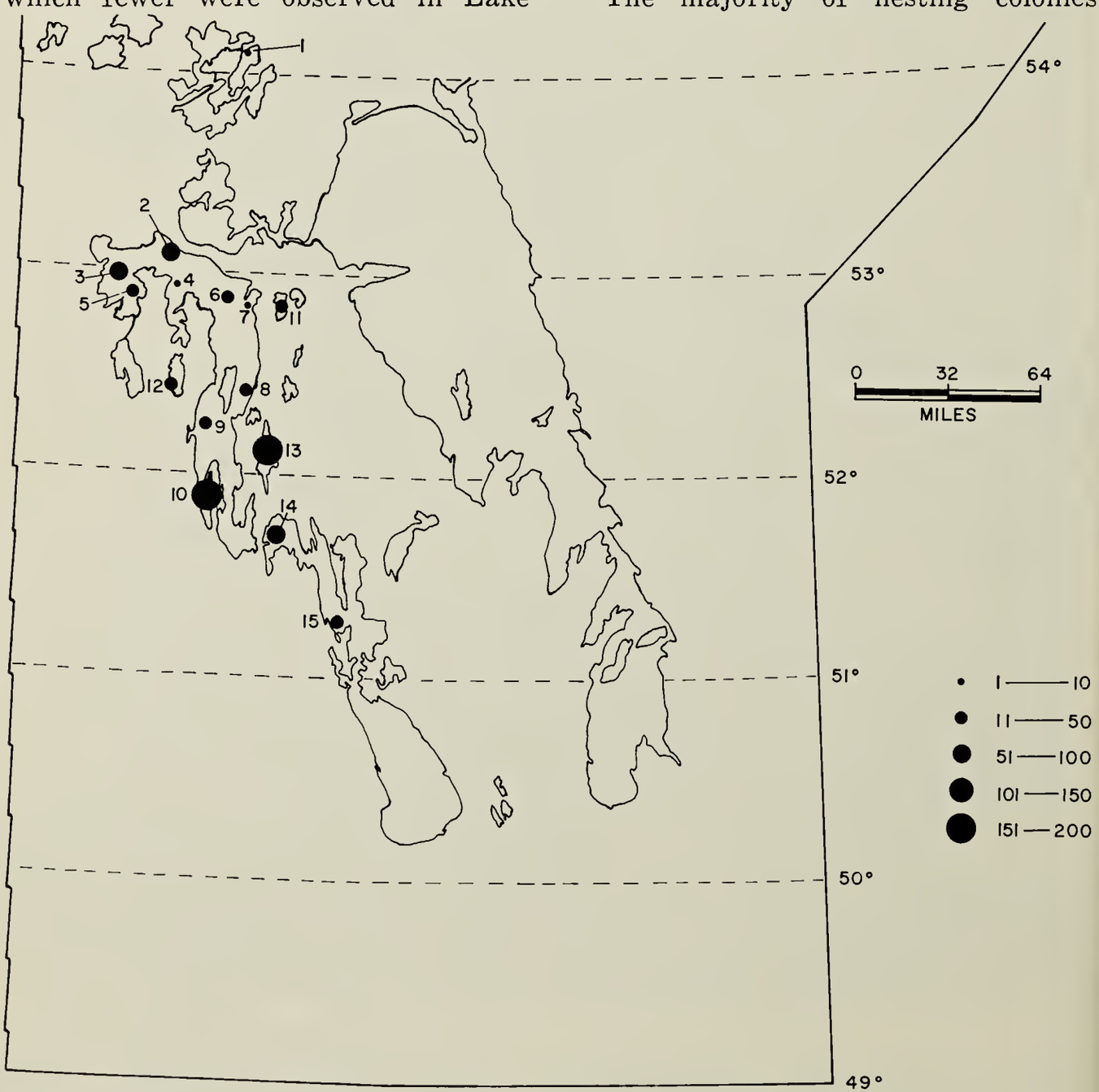


Fig. 1. Insular Great Blue Heron colonies on large Manitoba lakes.

Table 1 Distribution and size of Great Blue Heron colonies on lake islands in Manitoba in 1969.

Colony location	Latitude	Longitude	No. of nests
1. Talbot Lake	54° 07′N	99° 53′W	3*
Lake Winnipegosis			
2. Reef north of North Long Island	53° 04′N	100° 25′W	80
3. Rowan Island	52° 58′N	100° 53′W	80
4. Hay Island	52° 55′N	100° 22′W	9
5. Mason Island	52° 55′N	100° 41′W	45
6. Cormorant Island	52° 52′N	99° 56′W	26
7. Island southeast of Denbeigh Point	52° 49′N	99° 47′W	4*
8. Island southwest of Pigeon Island	52° 25′N	99° 46′W	45*
9. Island south of South Camping Island	52° 15′N	100° 05′W	35
10. Sugar Island	51° 52′N	100° 03′W	170
11. Kawinaw Lake	52° 50′N	99° 29′W	25*
12. Pelican Lake	52° 25′N	100° 21′W	48*
13. Waterhen Lake	52° 07′N	99° 33′W	160
Lake Manitoba			
14. North Twin Island	51° 42′N	99° 27′W	100
15. Island northeast of Reykjavik	51° 15′N	98° 58′W	25*
Total number of nests			855

* Counted from the ground (others counted from the air)

Fig. 2. Ground nest of Great Blue Herons at Talbot Lake.

were observed in elm *(Ulmus americana)* and box elder *(Acer negundo)* trees. In a heronry consisting of three nests at Talbot Lake, which was considerably north of the breeding range for Great Blue Herons as indicated by Godfrey (*The birds of Canada*, 1966), one nest was on the ground (Fig. 2) and the other two were elevated two feet in the only available red-osier dogwood *(Cornus stolonifera)* shrub. Double-crested Cormorants and White Pelicans nested on the same island as the herons in Talbot Lake. Two of four nests were also situated on the ground in a heronry within a Double-crested Cormorant colony southeast of Denbeigh Point in Lake Winnipegosis. The other two nests were elevated five feet in the only available willow *(Salix)* bushes. It appeared that the birds in both heronries preferred to nest on the islands without trees rather than at any of the many suitable locations along the densely forested shore of the nearby mainland.

AQUATIC BREEDING BIRDS OF THE ISLE OF BAYS, 1969

by **Kees Vermeer,** Canadian Wildlife Service, Edmonton

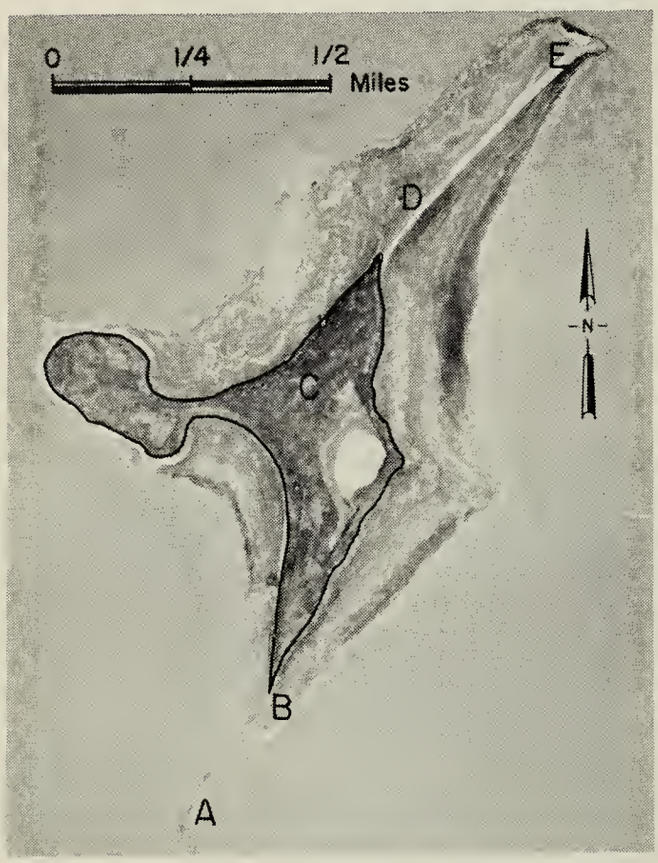


Fig. 1. Aerial photo of Isle of Bays, Old Wives Lake, 1965

A. Common Terns, 1969
B. Great Blue Herons, Double-Crested Cormorants and White Pelicans, 1957
C. Great Blue and Black-crowned Night Herons, 1969.
D. Double-crested Cormorants and White Pelicans, 1969.
D. California and Ring-billed Gulls, 1957, 1969.
E. Common Terns, 1957

Lahrman (*Blue Jay*, 15:106-109; 1957) described the bird life of an island, 50° 07′ N; 105° 55′ W, in Old Wives Lake, known as the Isle of Bays. I made some observations there on five days (May 14, 22, June 13, 14 and 26, 1969) while visiting the island to collect aquatic birds eggs for organochlorine residue analysis. Figure 1 shows a 1965 aerial photo of the 280-acre island; the insular configuration in 1969 was similar.

Numerous Ring-billed Gulls and several dozen California Gulls were observed nesting in region D (Fig. 1). Eighty-eight Double-crested Cormorant nests and 566 nests plus 200 large young of White Pelicans were also counted in that region on June 13. Five pairs of Great Blue Herons nested from 10 to 12 feet up in choke cherry *(Prunus virginiana)* bushes, while 415 nests with eggs and young of Black-crowned Night Herons were 2 to 10 feet elevated in those bushes in region C (Fig. 1). One hundred and forty Common Tern nests were found in the bare and rocky region A on June 14.

It appears that the gulls nested in the same area in 1969 as in 1957, while the cormorants and pelicans moved to the other side of the island (Fig. 1). Great Blue Herons changed from nesting on the ground in region B in 1957 to the choke cherries in region C. Lahrman did not observe Black-crowned Night Herons nesting on the island in 1957, but states (1957:107) " . . . up to 50 or more could be seen at one time. They would fly back and forth to the mainland where they

were nesting." Lahrman found terns nesting in region E in 1957 and as none was observed there in 1969, it appears that the terns also changed their nesting location.

Duck nests were counted for a five-hour period on May 22 and June 26. The count was made within the outlined and elevated area of the island (Fig. 1) which was covered with dense shrubbery, composed of *Symphoricarpos*, *Rosa* and *Ribes* species. Only about half the outlined area was briefly searched; hence, the number of ducks nesting on the island probably was three to four times that shown in Table 1. Nests located on May 22 were not included during the count on June 26. It can be seen from Table 1 that in May the Pintail was the most numerous nesting duck, while in the end of June the Gadwall dominated. There appeared to be only one nest destroyed by a mammal; perhaps the predator was a porcupine, one of which was observed on the island.

Two Wilson's Phalarope nests, a Marbled Godwit nest and a Spotted Sandpiper nest were also found. These species appeared to be the most abundant shore birds on the island. American Avocet, Killdeer and Piping Plover appeared from their behaviour to be breeding there. On June 26, hundreds of Western Grebes were observed along the marshy shore of the island.

A Marsh Hawk nest and a Short-eared Owl nest were also found.

Table 1. Number of duck nests counted on Isle of Bays on May 22 and June 26, 1969

Species	Number of nests May 22	June 26
Pintail	31	13
Gadwall	3	31
Mallard	15	14
Redhead	6	1
American Widgeon	2	3
Lesser Scaup	0	2
Total number of nests	57	64

Acknowledgments

Mr. J. E. Polson and Mr. T. Donald assisted with nest counts of pelicans, cormorants, terns and herons.

Photo courtesy of Saskatchewan Museum of Natural History

White Pelican on Isle of Bays, 1961

AUTUMN MIGRATION OF JUVENILE WHITE PELICANS FROM WESTERN CANADA

by **Kees Vermeer,** Canadian Wildlife Service, Edmonton

Recoveries of 112 White Pelicans *(Pelecanus erythrorhynchos)* banded at Quill (51°50′N; 104°20′W) and Redberry (52°40′N; 107°10′W) lakes, Saskatchewan, showed that pelicans in the autumn migrate SSE from Saskatchewan to Texas and Louisiana (Houston, 1967, 1968). In July 1968, 900 young White Pelicans were banded at Primrose Lake (54°57′N; 109° 42′W), Saskatchewan, and 45 at Stum Lake (52°16′N; 123°01′W), British Columbia, for the purpose of obtaining information on the autumn migration of pelicans breeding farther north and west than those at Quill and Redberry lakes. Judging from six recoveries, young pelicans raised at Primrose Lake migrate along a similar route (Fig. 1) as has been observed for those from Quill and Redberry lakes. However, three recoveries of pelicans from Stum Lake indicate that the birds from that colony follow a different flyway, as none had crossed the continental divide (Fig. 1).

The assistance in the banding of pelicans provided by H. Blokpoel and J. A. Keith, Canadian Wildlife Service, J. O. Keith, U.S. Fish and Wildlife Service, D. W. Anderson, University of Wisconsin, C. Scott, Alberta Fish and Wildlife Division, and personnel from the Air Force Base at Cold Lake is much appreciated.

LITERATURE CITED

Houston, C. S. 1967. Saskatchewan bird banders, Judge J. A. M. Patrick (1873-1943). Blue Jay, 25:172-174.

Houston, C. S. 1968. Saskatchewan bird banders, William I. Lyon and H. E. McArthur. Blue Jay, 26:185-187.

Fig. 1. Recoveries of juvenile White Pelicans banded at Primrose and Stum lakes.

Junior Naturalists

Edited by **Joyce Deutscher,** 7200 6th Ave., Regina

AN ADVENTURE WITH A PINE GROSBEAK

by **Harriet Jowsey,** age 15, Regina

One fine February afternoon my parents went out to birdwatch in the Legislative grounds where they saw many grosbeaks. There was a female Pine Grosbeak under a big evergreen and she was hurt. They thought that a cat had mauled her or that she had flown into a wire.

When we first got her home we put her in a tall box where bit by bit she ate sunflower seeds. Dad held the grosbeak, ran the water and she started to drink. Dad and Harold made a big cage for her in which there were two perches. The first perch was easy to get to but the second one was higher. One time when Dad was getting some water for her she flew out of the door of the cage. We knew she had become stronger for she flew around the room for about five minutes.

We kept the female Pine Grosbeak for two very interesting weeks. When we decided it was time to let her go, we first put her in the garage, so that she could get used to the cold again. My parents took her out in the middle of the day. I am sure I learned more about birds while she was with us for I was able to observe her at close range.

PICTURE MAKING WITH PRESSED LEAVES

by **Agnes J. Dobryden,** Winnipeg

Editor's Note: We are pleased to get the following suggestion from Agnes Dobryden, a member of the Junior Naturalists "alumni" whom many readers will remember as a letter-writer to *The Blue Jay* from a few years ago. Agnes sent us a sample of her handiwork, a very attractive wall-hanging. Her description of how to make the wall-hanging follows:

Leaves should be picked and pressed during the summer and autumn months. (Autumn leaves are especially interesting and colorful.)

The materials required are: Pressed leaves, winged seeds or sprays of seed grasses; rubber cement; a sheet of acetate or clear plastic; coarse woven fabric (the size of the picture); either two pieces of stiff cardboard and adhesive-backed vinyl in dark wood-grained design or one piece of plywood darkened with wood stain and one piece of stiff cardboard.

The picture is assembled as follows:

Cut a piece of plywood or cardboard the size of the picture. This is the outer panel of your picture and will serve as a frame.

The inner panel on which the leaves are positioned is a piece of cardboard measuring approximately three inches smaller in length and width than the wood-grained piece. Cover this inner panel with linen or coarsely woven fabric preferably in light beige to contrast with leaves of darker tones.

Arrange the leaves on the fabric panel securing the leaves with rubber cement. A light coat of spray varnish helps to bring out the color of the leaves.

After the arrangement is completed, the panel with the leaves is protected with a sheet of acetate or clear plastic placed over the leaf panel, overlapped to the back, and secured.

Finally, centre this picture panel to the larger wood panel, securing the two with cement. The picture is now complete.

CONTRIBUTIONS TO THE JUNIOR NATURALIST'S PAGE

Send your illustrations, stories and letters about nature to Mrs. Joyce Deutscher, 7200 6th Ave., Regina. We will be looking forward to hearing from you.

Photo, Creative Professional Photographers Ltd.

Saskatoon Junior Naturalists' exhibit in Saskatoon Sportsman's Show

The Blue Jay Bookshelf

HINTERLAND WHO'S WHO. 1969. By the Canadian Wildlife Service. Queen's Printer, Ottawa. Free.

The television commercials advise that for further information on animals featured on *Hinterland Who's Who* you should write to the Canadian Wildlife Service, Ottawa. And if you do, you will receive a two-leaf pamphlet containing a variety of information such as where and when to find the species, how to recognize it, and its life history. Each pamphlet has a good cover picture (black and white), a North American distribution map, and a list of other references. In addition to detailed description of the animals, facts about habitat requirements, relationships with other species, and origin of races are presented.

The need for proper land use management is stressed. For example, the decline of the mountain sheep can be reversed with reintroduction of grazing areas to prevent serious competition with cattle, sheep, and horses, for winter food. Also, more attention paid to tree harvesting practices could provide more forest areas in the early development stages so necessary for ruffed grouse. In order to maintain adequate prairie habitat for mallards, the Canadian Wildlife Service is now leasing wetlands from farmers. These undertakings are of value not only so that individuals may enjoy the experience of seeing plentiful wildlife in its natural surroundings, but also because most species provide some tangible benefit to the environment—the chipmunk aiding in seed dispersal, and the mallard assisting in the control of mosquitoes. Of course, if a species became too numerous, controls may have to be used to prevent damage such as the chipmunk's consumption of enough seeds to prevent reforestation, or the mallards depredation of western farmers' crops. It is pointed out that using poison as a control is dangerous.

The pamphlets provide all sorts of interesting bits of information such as: the generic name for grouse, *Bonassa*, means "good when roasted"; a pair of Dall sheep horns may weigh more than thirty pounds; and a chipmunk is sightless until about thirty-two days old. A lot more can be learned through research. For example, it is not yet known whether a chipmunk eats its stored food periodically throughout its hibernating period, or whether it only hibernates as an emergency measure, after the food supply has been used up.

In general, the *Hinterland Who's Who* series seems to do a worthwhile and effective job of promoting both increased awareness and enjoyment of our wildlife and realistic management of all of our natural resources. —*Nora Stewart*, Lumsden.

GLACIERS AND THE ICE AGE. By Gwen Schultz. 1963. Holt, Rinehart and Winston, Inc., New York. 128 pp., illustrated. Soft cover $1.94

Glaciers and the Ice Age is especially pertinent reading to those living on the Great Plains where the environment has been so strongly altered by the Ice Age. Miss Schultz, in this lucid account, tells how the present landscape with its geomorphic forms results from the effect of continental glaciation upon the pre-Pleistocene terrain, most of which can be applied to Canada. While her emphasis is upon North America, she relies on European evidence to show how man adapted to this overwhelming act of nature.

The numerous illustrations, probably the best attribute of the book, provide an adequate field guide to the recognition of diverse glacial forms. Especially valuable to those with only a passing acquaintance with geology are the diagrams which relate the chronology of the Ice Age to the rest of geologic time.

The book as a whole is in serious need of editing to bring it up to date

and to correct a few glaring errors, e.g., p. 44: "He cracked baboon skulls to obtain the 'sweetbreads' inside." And again, p. 87: "Because for some time they [early modern men] had had good cutting tools and had cooked their food, the jaws and teeth, less needed for cutting and chewing, had shrunk." A few other statements and passages are misleading, although they are generally rectified several paragraphs or pages later. With correction of this type of error and a general updating the text would be more acceptable to the critical reader.

The 13 chapters present a logical sequence from the geological story of glaciation to the final intriguing chapter entitled "Will the Ice Return?" Along with a rather complete bibliography (up to 1963, the publication year) *Glaciers and the Ice Age* can lead the reader into an interesting aspect of natural history.

Despite errors this is the best available short study of the subject. Considering its low cost, it is an attractive addition to one's natural history library.—*George E. Lammers*, Manitoba Museum of Man & Nature, Winnipeg, Manitoba.

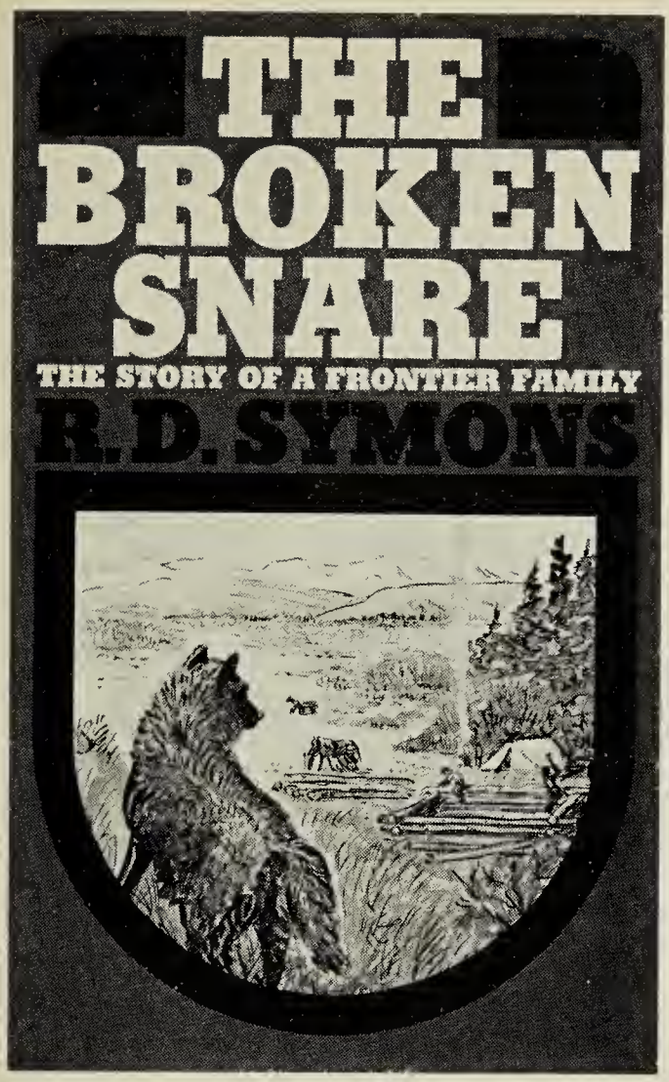
SASKATCHEWAN AND THE ROCKY MOUNTAINS. 1969. By the Earl of Southesk. Republished by Hertig, Edmonton, B-and-W illustrated, 448 pp. $5.95.

In 1859 a young Scotsman, the Earl of Southesk, who was in poor health at the time, decided for medical reasons to leave his work and take a hunting trip on the Western Prairies. Fifteen years later he wrote his diary, which has just now been republished, a century later. The Earl was a hunter, and his diary is of particular interest to natural historians, for he describes the animals which he came across as well as giving information of more general interest.

Travelling across the United States as far as the railroad would take him, he then moved north to Lower Fort Garry. Subsequently he rode along the trade trails of the Hudson's Bay Company, describing the prairie scenes, and we get glimpses of the fur-trading era as the company employees greeted his approach by gathering outside the stockade and firing their muskets into the air. He entered Saskatchewan near Fort Ellis, where he described the antelope and buffalo wolf, whose presence he recorded at various locations as he moved along the Qu'Appelle Valley to the Elbow. Finding that the Crees and Blackfeet were on the warpath, he thought it wise to move toward Fort Carlton. He describes the Indians hunting the buffalo on horseback when huge herds covered the prairie, and also a grizzly bear hunt 60 miles from Saskatoon. As the expeditions proceeds, he tells of his roasting a skunk for supper and of his sitting in his tent every evening reading the works of Shakespeare as a diversion. Visiting the forts along his route, he listened to the anecdotes and stories of the traders and Indians; he retells these for us, describing the beliefs and customs of the Indians and of various native animals such as "that savage and treacherous wild beast, the puma."

From Saskatchewan the Earl travelled to Edmonton, Jasper, the Kootenays and then back to Edmonton. By the time he was ready to return, the winter had become unusually severe. Often he travelled in sub-zero temperatures setting out at 4:00 a.m. with dog sleds, and at night the party sheltered under buffalo robes around roaring fires, freezing on one side and roasting on the other.

The Earl had a perceptive mind and his prediction that the buffalo herds would not survive the use of modern weapons and increased hunting has been proved correct. It is regrettable that there was no picture of the author and that his own sketches are not of the same standard as his prose. For those who are interested in Western Canada before the railroad came, this is an indispensable record. For this reason, the reprinted edition of the Earl of Southesk's diary is especially welcome.—*Tom White*, Regina.

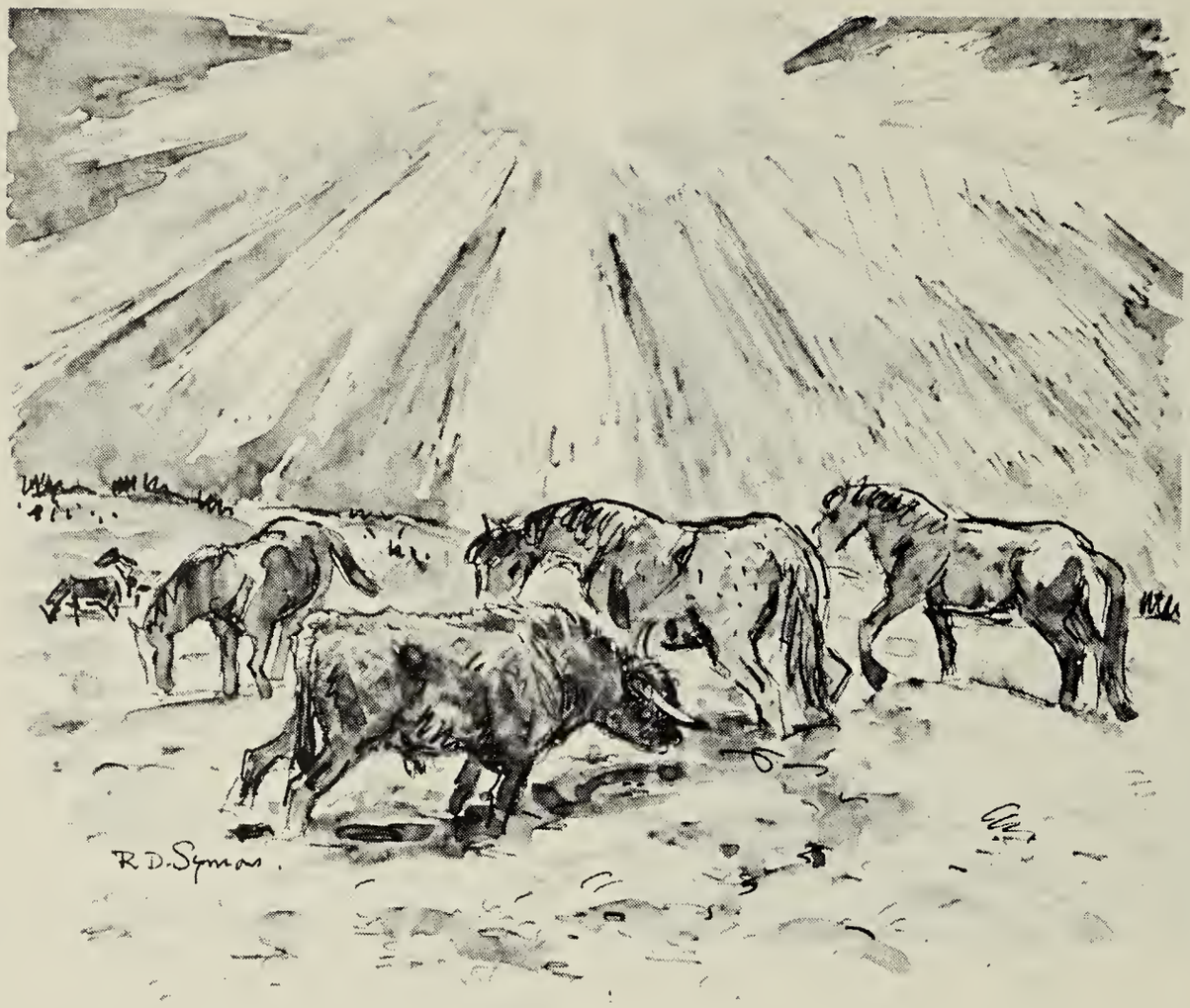


THE BROKEN SNARE. By R. D. Symons. 1970. Doubleday and Company, New York and Toronto. 224 pp. Illustrated with sketches by the author. $6.95. Available from the Blue Jay Bookshop, Box 1121, Regina, Saskatchewan.

In a recent article in *The Manchester Guardian Weekly* on the work of a team of ecologists at Monks Wood, the main experimental research station of Britain's Nature Conservancy, one of the scientists is quoted as saying, "The trouble is that man is only really interested in what is going to affect man." In essence, this basic problem is what R. D. Symons' new book, *The Broken Snare,* is all about. The story of a man and his family who, in an attempt to escape the mechanization of modern society, establish themselves in the wilderness of northern British Columbia and almost succeed in their venture, this book describes the problem of ecological balance with honesty and vigor. And though the major portion of the narrative relates the struggle of the Man and the Woman to exist in the land they have chosen, the author skilfully shifts his focus in order to clarify the viewpoint of the wild creatures who are also a part of that land; in effect, the story of the Black Wolf is as important as the story of the Man. The emphasis on the essential equality of all creatures is pointed by the inclusion on the title page of that most celebrated of all "levellers": All flesh is grass.

This is not to suggest that the book is primarily a propaganda piece. It is far from that. The Man and the Woman, nameless in order to suggest their conscious identification with "unaccommodated man," think, love, suffer and laugh as flesh and blood people do. It is true that, in this connection, the dialogue is occasionally stilted and unconvincing (I wish, for instance, that the author had seen fit to omit the final paragraphs of conversation in order to conclude with the reference to the wolf), and a sprinkling of commonplace expressions reduces the effectiveness of otherwise graphic passages. But there is no lack of sureness in the way in which Mr. Symons expresses the *unspoken* thoughts of his characters, eloquent, poetic thoughts which vividly bring to life the scene which prompted them at the same time as they reveal the personality of the thinker. In fact, it is the sensitive perception of the musing character which directs and even controls the response of the reader to the material presented—the kind of power which characterizes introspective essayists, a group to which I suggest Mr. Symons primarily belongs. Notice, for example, the surge of excitement which moves from thinker to reader in the following passage:

> "And surely green grass could not be far away, the Man thought as he turned the corner of Moose Point, which was already bare of snow and smelling of good frost-free earth at last. It was the third of April. Looking west to the mountains he saw no sign of a change of weather. The great arch hung high above them. The chinook, redolent of the Pacific, was playing its usual fine-weather



tricks, and he saw the jumbled peaks in a mirage, their sharp crests sliced off and moved away from their bases by the meeting of warm and cold air currents. It made him think of the Carmelhan at anchor, and

Valdemar Victorious,
Who looketh in disdain
To see his image in the tide,
Dismembered, float from side to side
And reunite again.

Those wonderful mountains! Smoking like Sinai in summer, skipping like rams these early spring mornings."

The book is filled with fascinating details of ranching life — precise descriptions of the wolf traps and of the habits of the wolves themselves in relation to the traps ("The traps would be carefully stepped around, or sometimes even flipped over and sprung by a quick jab of a paw from underneath, and in final derision, urinated on."); the death of a wild colt slaughtered by wolves; the killing of a bear by an indomitable Highland bull; the technique of turning a "neat, square corner" with a mower. Each description is vivified by the sense of urgency inherent in each specific situation, augmented, of course, by the fact that this author looks at the world with a clear eye. "Pack-rats—now they were something different. Nasty, smelly things, all furry and soft. They crept around like Kipling's Chuchundra, afraid to get out in the centre of a shed or room. If you hit one with a club it went all *flat* — as if it had no proper bones. And their big, black, sad-looking eyes . . . "

I have already mentioned the technique which makes use of the shifting point of view. When Symons writes from the standpoint of the wilderness animals, his style is at its best — spare, yet coupled with a strongly sensuous appeal:

"But this morning it was a big red fox who watched the shuffling, noisy birds. The fox took two, three steps, belly to the ground. He knew how to make that final rush. He knew that from among the startled, fluttering grouse he was sure to be able to seize one in his narrow, toothed jaws. At the moment he tensed for the onslaught, he heard a strange, high, drawn-out crow—something he had never heard before. He backed up, turned, and loped away like a wind-blown leaf."

There is no doubt that the world of *The Broken Snare* is a brutal world. Yet the brutality demanded by the urge to survive has a quality different from the brutality prompted by the urge to dominate. In the wilderness the Man kills for food and the animals kill to maintain their species but "civilized" man kills for money or fun. The horsetraders, cunning and unscrupulous, are a greater threat to the Man and the Woman than the wild creatures whose actions are instinctive. In the end, it is mechanized society, symbolized by the bulldozer of the oil company, which drives the Man from his home. From the beginning the Man had attempted to maintain the ecological balance of the area; he had regretted the unavoidable battle with the wolves. He had insisted that the Lad be moderate in his trapping; he himself had no desire to cultivate every square inch of his land.

"From near the buildings, almost to the creek, there was a break in the hayfield formed by a low, rolling ridge of prairie which the Man had considered too rough to cultivate. Also, the prairie chickens danced each spring on its smooth, short-grassed knolls among the wild crocuses, and later the wild flax nodded in blue ecstasy with lacy bedstraw. He could not bring himself to tear up with cold steel such a little garden of beauty, such a flowery prairie, for the sake of a load or two of fodder."

There is a striking contrast between this paragraph and the account of the oil company bulldozer which roars "right through the raspberry patch which had given them fruit for so many years, throwing the dirt to right and left, tossing the canes on high—pitiful vines clinging, revolving with the inexorable Caterpillar tracks—soiled, bleeding fruit staining their shining steel." One is reminded of a similar scene in *Lady Chatterley's Lover* where Sir Clifford, in a fit of furious frustration, drives his motorized chair through a field of spring flowers leaving them "mashed" and "wretched" under the wheels.

When the last wolf escapes from "the broken snare" and turns to seek a

new life "where the mountain sheep [keep] their courts," the Man, the Woman and the little girl, Small, are relieved, for they recognize their own instinct in that of the wolf. In the passage which concludes this climactic incident the poetic quality of the prose makes the identification of the author with the wolf movingly clear:

"The wolf turned to a spruce stump, left his sign for the last time, and started for the west without looking back. By the time the sun was up he had made fourteen miles, had crossed the Elk-Run. He climbed the far bank, up and up to the desolate scrubby heights beyond. The mountains looked closer now, the sun touching their cold peaks with rose, their bases lost in the frost-fog.

The traveller crawled into a snow-free crevice among the rim-rocks and slept. He rose at mid-afternoon, hungry again. He killed and ate a snowshoe hare, gobbling fast, and then broke once more into the mile-eating wolf lope.

Just before dawn he stopped, looked to the sky, and howled several times in succession. Some of the lonesomeness had gone from his voice, which now had a more challenging, a more enquiring note. After each outburst he paused to listen, ears cocked and nose to the west.

At last, as he listened intently, he heard, far away and faint, an answering call."

At the end of the story when the Man, like the displaced animal, turns his face towards a new life, a sense of bitter sadness prevails. But it is the sadness which is an inevitable component of wisdom and which in no way resembles a state of desolation. For him it will never be "too late to seek a newer world."

A part of that "newer world," a world of writing and painting, is made evident by the existence of the book itself (along with the earlier *Many Trails* and *Hours and the Birds*) and by the inclusion in *The Broken Snare* of a series of sketches which sensitively suggest the moods of the book. In these we see the Man absorbed in his work, the gentle cow moose tenderly feeding her young, the awesome starkness of the Northern sky with the cattle and horses foraging under it, the courageous isolation of the Wolf and, in the sketch on the jacket, a pictorially comprehensive statement of the story's larger themes. The artistically sure composition of this picture forces the eye from the tense, questioning wolf to the laboring intruder and from there to the mountain spaces beyond. (It would be a pleasure to prepare a review on these excellent sketches alone.)

Henry David Thoreau once wrote, "I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived." The author of *The Broken Snare* understands what Thoreau was talking about.—*Jeanie M. Wagner*, University of Saskatchewan, Regina.

THE WORLD OF THE FROG AND THE TOAD. By George Porter. 1967. J. B. Lippincott Company, Philadelphia and New York. 153 pp. Illustrated. $5.95.

George Porter is one of the better examples of a competent amateur who has successfully applied his pen and camera to produce a book on some of his favorite animals. He points out in his introduction that this is not meant to be either a textbook or handbook on frogs and toads but rather a sharing of personal observations and experiences. Within this context it may be highly recommended to those previously uninitiated in the arts and pleasures of observing these creatures in their natural surroundings.

The arrangement of topics is mainly seasonal. An author's introduction and general section titled "Meet the Frogs and Toads" is followed by sections entitled, "Spring", "Summer", "Autumn" and "Winter." The importance of spring in amphibian life history—as well as the relative ease of observation at this time, provided one is willing to don a headlamp and search after darkness—is indicated by the fact that 74 of the 153 pages of the

book are devoted to this season. A brief but useful chapter entitled "Photographing Frogs and Toads" is followed by a sensibly written ("wild animals are not toys") and practical chapter "Keeping Frogs and Toads in Captivity." Another chapter devoted to "Species and Subspecies" gives scientific names and describes the distribution of each species mentioned in the text. The book concludes with a short bibliography and an index.

The western naturalist will be disappointed to find that the emphasis of the book is eastern. It is primarily based on observations made in Westchester County within an hour's drive of the writer's home in New York City, but includes comments on species seen in the Pine Barrens of New Jersey and south to Florida, the Adirondack Mountains of New York, Grand Teton National Park in Wyoming, and Los Padres National Park near Los Angeles as well as on a few additional forms from other areas. Actually only three species that occur in the Canadian prairies are included. However, within the major groups covered, toads or frogs with habits similar to those of prairie forms are often mentioned. The book is well illustrated with excellent black and white photographs of frogs, toads, and treefrogs, and a variety of other creatures that share their environment.

This book is to a large extent pleasantly free of the errors of generalization based on incomplete knowledge that plague many books for amateurs by amateurs. Some relatively unimportant mistakes do occur, however. For example, on page 68 a comment is made that the different sounding Gray Treefrogs, *Hyla versicolor*, in the south are probably a case of variation "simply due to geography, temperature and other conditions." It is more likely that this observation refers to the distinct form considered a sibling species, *Hyla chrysoscelis*, by recent workers.

For anyone who has not discovered the fascination of frogs and toads, or for the already enlightened student with a dull winter evening to pass, this volume is heartily recommended as informative and enjoyable.—*Francis R. Cook*, National Museum of Natural Sciences, Ottawa, Ontario.

RUFFED GROUSE. 1969. By John Madson, Conservation Dept., Olin Mathieson Chemical Corp., East Alton, Ill. 104 pp. Illustrated. $1.00.

"There is a world of difference between the willow slap of central Alaska and the laurel thickets of northwest Georgia. Different trees, different people, different land to say nothing of a slight difference of climate and 3,600 miles."

"But the two landscapes have one thing in common: Ruffed Grouse."

"No other game bird can match this grouse for getting around. He's at home in forests from north of the Yukon almost to Florida, and from Maine to Washington state. He lives in the deepest wilderness in North America, but may wander into Manhattan."

This quotation opens an informative book on the Ruffed Grouse which contains chapters on life history, management and hunting, and includes tips on how to increase grouse numbers. The book is well-written in simple, down-to-earth language and is illustrated with photographs. Unusual aspects of grouse life history such as drastic population cycles and crazy flight patterns are explained. — *Anthony J. Hruska*, Gerald, Sask.

Photo by R. A. Mitchell

Ruffed Grouse at The Pas, Manitoba

BROCHURES

The following three booklets have been received by the editor of the *Blue Jay* during the last few months. They have been prepared by three institutions in Manitoba and Alberta. Apparently distributed free to friends and supporters, they artistically illustrate and describe some of the work being done in this part of Canada.

Manitoba Museum of Man and Nature, Annual Report 1968-69.

This attractive booklet outlines work done by various departments of the museum for the most part before the material was moved to the permanent location at 190 Rupert Avenue, Winnipeg 2. Exhibits will be open for inspection by mid-July 1970, so anyone planning a trip would be wise to include an inspection of this fascinating museum.

Several names mentioned are familiar to readers of the *Blue Jay*; for example, W. J. Mayer-Oakes, Jack Herbert, Bob Nero, Dick Sutton, Harvey Beck (now in Calgary). Anyone interested in museums or in natural history will appreciate the artistic layout of the booklet, including photos (some, no doubt, taken by another *Blue Jay* contributor, Bob Taylor). It is obvious that we would all feel at home in the Manitoba Museum of Man and Nature.

Glenbow

This booklet tempts one to visit the Glenbow — Alberta Institute, for it appears to be an excellent source for scholars and students interested in Canadiana, particularly of the early west. But one wonders how all the items mentioned — German porcelain, Maori art among others — could be displayed to advantage.

It would be helpful if the booklet included the price of admission and visiting hours of the museum. However, inquiries are invited; and for a small annual fee, Members of the Museum will receive a free pass to the museums in Calgary and Banff. There is also a Newsletter. Enquiries should be sent to the Executive Director, Glenbow - Alberta Institue, 902 - 11th Ave., S.W., Calgary 3.—*J. Sheppard.*

An artist's View of Nature
Carl Rungius

This booklet provides an outline of the life and artistic works of Carl Rungius. It can stand on its own or as an accompaniment to an exhibit of the artist's work. Several examples of the many techniques used by the artist—oil, dry point and pencil drawings—are illustrated in a very tasteful layout.

My one criticism of the booklet is that no works are dated. Although the exact date may not be known, surely an approximation could be made. Without the dates it is difficult to see the development and change in the artist's style.

The booklet by L. E. Render and D. A. E. Spalding is publication No. 1, 1969, Provincial Museum and Archives of Alberta, 12845 - 102 Avenue, Edmonton.—*J. Sheppard,* Regina.

Publication Note

Watch for the publication in June of this year of *Birds of the Churchill region, Manitoba* by Joseph R. Jehl, Jr., and Blanche A. Smith. Special Publication No. 1, Manitoba Museum of Man and Nature, 190 Rupert Ave., Winnipeg 2. About 100 pages, illustrated.

Persons going to Churchill in June or July will certainly want a copy of this report.

SASKATCHEWAN NEEDS NATURAL AREAS

Today we hear and read much about the threat of pollution to human health and survival, and of what must be done to clean up our deteriorating air, water, soil and food. Mostly the proposed solutions are remedial not preventive. Just as the doctor is usually called after the illness sets in, so as the environment sickens the public turns to the engineer with the expectation that he will provide a ready cure. But both in the case of medication and of sanitation some forethought, such as the prescription of a health-sustaining regime, will go a long way toward preventing infection and subsequent crises. Should not more attention be given now to preserving and maintaining a health-promoting proportion of our unspoiled outdoor areas—our lakes and streams, grasslands and forests?

Within towns and cities the values of parks and open spaces, gardens and treed boulevards are recognized. These bits of tamed nature introduced into the urban milieu help to make it tolerable. But still on holidays we flee the city in search of the real thing, driving perhaps to a favorite quiet spot in the country or to a lakeside cottage, escaping to the ancestral environment. What we seek is an uncluttered natural landscape, with fresh air, clean water and scenic variety, all the things that are scarce commodities in the city.

Even in the country, however, such natural areas are disappearing as industrialization, once confined to centres of population, extends to the agricultural and forestry economies. Heavy machinery is changing the earth's surface features. Now it is feasible to level the topography, to fill in or drain the potholes and marshes frequented by waterfowl, to completely remove the vegetation cover that shelters upland birds and deer. The depressing results are all around us; the landscape is simplified and loses much of its charm. Variety, the spice of life, diminishes.

When we consider our needs for re-creation and contemplate the unattractive prospect of a world in which every area will be manipulated and humanized, then the preservation of at least some parts of the native landscapes with their fascinating assemblages of wild animals, plants and land forms seems to be something quite other than a waste of resources. A varied landscape, aesthetically pleasing, contributes in many ways to physical and mental health. We ought to ponder, too, an ethical question little explored by philosophers and religious leaders: man has the power to remodel the entire world for his own narrow ends, exterminating if he wishes all other forms of life that evolved over millions of years with him, *but does he have the right?*

The more the world is rearranged the more environmental problems appear. It is an unfortunate fact that the pathological condition called "pollution" is caused by the organism "man". "We have identified the enemy and he is us". From outer space man's densely settled and industrialized areas have the appearance of a spreading fungal growth consuming the earth's green cover. Pollution is the byproducts and poisons of man's metabolism, not only that of his body functions but, more seriously, those enormous externally-produced wastes that accumulate through the harnessing and application of enormous energy in modern industry. Pollution, in other words, is the normal result of massive populations and their massive, wasteful technologies. Since neither population nor technology is controlled, the sickness is epidemic and gaining ground. *The Financial Post* recently recommended that investors put their money in pollution control equipment firms, a piece of advice that accurately reflects the burgeoning future of pollution!

People are asking: How can we fight pollution? There are two comple-

mentary answers: change social directions so that follies of the past are not repeated and clean up the present mess. The first is long-term; it looks to the future and perhaps requires a cultural revolution whereby we begin to *care* for the earth, placing husbandry of it before purely economic goals (some of which are superfluous anyway). The second is short-term and immediate, relying on improved engineering such as better chemical water treatment, taller smoke stacks, control of particulate emissions, and so forth. On examination many apparent solutions turn out to be only transformations; the problem is shifted, to reappear somewhere else in a different form. For example, replacement of traditional fuels such as coal and oil by nuclear reactors will improve air quality, but the trade-off is heat pollution of water. Similarly, the incineration of garbage protects land and water by transferring the problem to the air. Engineering solutions are useful but by themselves they are not enough. It seems likely that the long-term answer lies in the limiting of human numbers, in the fashioning of a controlled technology that mimics the earth's normal cyclic processes, and in a greater solicitude for the natural environment that up to this time has sustained us.

Earth Day was recently marked in the United States and Canada with activities designed not just to protest pollution but to begin a "Care" program for this planet. One obvious and creative goal is protection of the "wild" landscape. Why not then a program in Saskatchewan to preserve Natural Areas, tracts of the native prairies, forests and wetlands that are representative of the province's remarkable geography? For example, around Saskatoon and even within the city limit there are still many interesting undisturbed river bank and poplar bluff sites that should be marked for preservation now. The local Natural History Society is promoting just such a program and it should be supported.

The idea of Natural Areas is not new; it has been in the minds of naturalists and teachers, outdoorsmen and resource managers for a long time. To some extent the parks people and recreationists have recognized that preservation of nature is an important aspect of first-class parks, but unfortunately there are too few of these. Where, for example, is Saskatchewan's grassland park, its sandhill park, or its aspen groveland park?

What has been lacking is widespread public concern for the world's outdoor treasures, but now there are hopeful signs of change. Deterioration of environment is sparking national and international action. Recently the International Biological Program endorsed a world-wide effort to set aside Natural Areas for future use as outdoor museums, for teaching and research. Canada is participating, the National Research Council is providing support, and in Saskatchewan a preliminary program of inventory is underway. Candidate areas suggested by the public as worth saving are being examined by teams of ecologists and if such areas meet the required international standards, their preservation will be recommended to the government.

The assistance of interested persons and organizations in selecting areas and in making a case for their preservation is solicited. Here is an opportunity to save some attractive fragments of the fast-disappearing "old world", thereby taking a small but significant step toward the nonpolluted planetary society!—*J. S. Rowe*, Saskatoon. Reprinted from *Star Phoenix*, May, 1970.

CHANGES IN ABUNDANCE OF BIRDS

I have been farming in this district for 50 years, and deplore how scarce or non-existent birds have become. To mention a few, Greater Prairie Chicken were common in the 1920's, and every spring for an hour after sunrise the air would be full of their loud booming sounds; quite different from the Ruffed Grouse, the Prairie Chicken has vanished completely. The Upland Plover

is rare and I only saw one pair on a prairie quarter in each of the last two years. The Marbled Godwit is much less common and the Long-billed Curlew has vanished from my district. The Burrowing Owl, which used to be common, I have not seen for several years.

The Sharp-tailed Grouse is still here but not common. Last spring a fair number came through the winter, but few young birds seemed to mature. It is my opinion that the hunting season should be closed for them and for the Ruffed Grouse. The Gray (Hungarian) Partridge, on the other hand, is plentiful. Two other species of birds that have become evident in the last 20 years are the Black-crowned Night Heron and the Starling.

In November, 1969, we had 18 blackbirds stay until late December, when only eight remained. I have since heard that my neighbour one and one-half miles away had some blackbirds come about January 1. After the cold week in January only two of the blackbirds were around; during the –30 to –40 degree temperatures I found one male Rusty Blackbird frozen.

In the 1930's I obtained "Birds of Canada" by Taverner (priced 75¢, paper back!) with excellent color prints. This book gradually wore out by the time my seven children were through high school and for the past few years I have been without a bird reference book except for one borrowed from the local library in Whitewood. Recently my youngest daughters gave me "Birds of Canada" by Godfrey, which is excellent for indentification purposes. — *G. M. Hewson,* Langbank, Saskatchewan.

BIRD NOTES FROM SOVEREIGN

As the years pass by I cannot but take notice of the pleasures of bird watching from the farm housewife's point of view. Each year now I see one or two species of birds that are new to my locality. In 1969 my late husband and I were very surprised to see a Great Blue Heron on April 3 standing close to a corner of the caragana hedge surrounding the farm yard. Eighteen inches of snow still covered the ground where the heron was standing and there was no water anywhere around. It flew to another area of the yard when it saw us, and was there the rest of the day until 4:30 p.m. when it took off and flew southeast.

Then in late summer another new sighting. On September 12, 1969, I saw a Varied Thrush hopping on the lawn. It continued feeding and drinking from the bird waterer on the lawn and surrounding flower beds until September 19 when it apparently continued its migration.

In 1953 we planted many trees and shrubs that provide seeds and berries around the house, yard and garden area, and also a small orchard. This planting is mature now, and really draws the birds.

In winter there are always one or two coveys of Gray (Hungarian) Partridge and sometimes a few Sharp-tailed Grouse. The redpolls seem to like roosting in the evergreens at night and are always close by.

I hope you young farm families take time to plant a few shrubs and trees each spring. For when your family is grown and away, you will have more time to enjoy nature.

We found cotoneasters, flowering crabs, honeysuckle and lilacs best for our locality. Ash, maple and spruce in the windbreak also help the birds. Crabapples, currants, raspberries, sandcherry and chokecherry, help out the jam and jelly larder as well as the birds.—*Dorothy Winny,* Box 25, Sovereign, Saskatchewan.

INSECTS

I have made up a butterfly identification chart which is nonscientific in appearance and arrangement. It may be of some help to beginners in the interesting subject of entomology.

I have now collected 16 of the 18 species of Tiger Beetles which J. B. Wallis records for Saskatchewan.—*Ronald R. Hooper,* Box 205, Fort Qu'Appelle, Saskatchewan.

AN UNUSUAL BEETLE FROM MANNING PARK, B.C.

The accompanying photograph of a Snowy Round-headed Wood Borer *(Pachyta armata)* feeding on the nectar of flowers of angelica *(Angelica arguta* Nutt.) was taken by me in Manning Park in July, 1969. This beetle has wing-covers or elytrae that are a rich golden-yellow. The head, antennae and legs are black. Three specimens collected by me averaged 16 mm. in length. This species was observed feeding throughout the day, from about 9:00 a.m. to at least 5:00 p.m., most frequently at sub-alpine levels, i.e., 4000 feet above sea level. I also found them on several occasions feeding on cow parsnip *(Heracleum lanatum* Mich.). All observations were made on bright days, either sunny or cloudy. They were less active on overcast, dark days and inactive on rainy days.

Little is known of this insect's life history. The following information was provided by David Evans, entomologist with the Forest Research Laboratory, Insect and Disease Survey, Victoria, B.C.:

" . . . occurs in B.C., Washington, Idaho and Oregon, but is seldom common. It is more frequently found at higher altitudes. Unfortunately, I can offer little more information. I assume the larvae require a couple of years to develop and could take much longer under adverse conditions, but I do not know the host plant(s)."—*Al Grass*, 5666 Rumble St., Burnaby 1, B.C.

MEADOWLARK WINTERS AT SOMME

This past winter a meadowlark stayed at the farm of Leland Tessimer. The bird fed around the cattle which were outside in a shelter-bluff of trees near the barn. On cold stormy days in January it went inside the pig shed, using the hole in the wall by which the pigs could always go in or out. The meadowlark survived the winter in good shape and stayed with the Tessimers' cattle until April.—*Donald F. Hooper*, Porcupine Plain.

TURKEY VULTURE SIGHTING

On July 15, 1969, I saw a Turkey Vulture while exploring for clay deposits. The location was about four miles west of Willowbunch, up on a high plateau but near its coulee-riven north edge. As I stood atop a point jutting into the coulee, I saw a large black bird somewhat smaller than an eagle soaring silently on updrafts such as circulate in coulees. It was its silence that drew my attention; a hawk would have been squawking its head off at me. I had binoculars along and thus could make out the bald red head. The trailing half of the wings gave me an impression of translucency; the texts state they are of a lighter colour, however.

I do not know how common mere sightings of the Turkey Vulture are, as opposed to nesting records (*Blue Jay 27*, 37-39, 1969), but this is the first time I ever saw one in a life spent in Saskatchewan. — *John H. Hudson*, Saskatoon.

HEGLUND ISLAND ESTABLISHED AS WILDLIFE REFUGE

The establishment of Heglund Island in Cypress Lake, Southwest Saskatchewan, as a wildlife refuge was recently announced by C. B. Forbes, Director of Wildlife, Department of Natural Resources, Regina.

Mr. Forbes stated that the value of Heglund Island as a nesting site for several bird species had been investigated by Dr. Kees Vermeer, Canadian Wildlife Service, and reported in the March, 1970, *Blue Jay* with a strong plea for protection of the area. The 210-acre island was found by Dr. Vermeer to have large nesting numbers of Canada Geese, Mallards, gulls and, of particular interest, White Pelicans and Double-crested Cormorants.

The Cormorant Colony is the largest of ten colonies of this species in Saskatchewan and this makes up more than one-third of the total breeding population of cormorants in the province. This, plus the fact that the 90 breeding pairs of Canada Geese may constitute one of the largest concentrations of insular nesting geese in Saskatchewan, warranted the need for special protection of the nesting island.

Mr. Forbes stated that some species of birds have been endangered by the use of pesticides in their winter habitat in the United States. Careful protective measures will assist in maintaining these bird populations.

Mr. Forbes requested the public to refrain from visiting the island particularly during the nesting season, at which time any disturbances can result in a large loss of young. *Fishermen and all visitors in the area are asked to co-operate in guaranteeing the privacy of the island until after July 15.*

GRANT FROM DUCKS UNLIMITED

On May 23, 1970, Dr. W. K. Martin, Chairman of the Board and Past President of Ducks Unlimited, Canada, made a presentation of $8,000 to Wascana Waterfowl Park for the improvement and preservation of natural habitat in the park. The presentation was made to the Honorable D. V. Heald, the Minister in charge of the Wascana Waterfowl Park.

The money is not to be used for preparation of display ponds or for any work in this area which will be heavily used by the public, instead, the $8,000 will be spent to fence and protect that area which was formerly owned by Fred G. Bard and which is used extensively by nesting waterfowl and other birds.

We all know something of the good work that Ducks Unlimited is doing in the preservation and improvement of habitat and this project, directed as it is towards the improvement of an urban area, is particularly praiseworthy. It will help maintain and enhance the quality of this natural prairie marsh in our largest Saskatchewan city. — *G. F. Ledingham*, Regina.

WHOOPING CRANES SEEN

This apparently is our lucky year! My husband and I were out this morning (April 9, 1970) at 10:30 looking for artifacts when Keith called to me to watch a flock of Sandhill Cranes coming over from the southeast. There were 35 cranes but part way along one wing of the V were two adult Whooping Cranes then two or three Sandhills, then an immature Whooping Crane and two more adults. There was no disputing what they were, for they were fairly low and clearly distinguishable.

We have always wondered if we would recognize the Whooping Crane if we saw it. Now we know. This year we have seen seven, for earlier in the week we saw two. We just can't believe that we have been so lucky as to see seven Whoopers in one year. — *Mrs. Hazel Paton*, Oxbow, Saskatchewan.

A NATIONAL VOICE FOR NATURALISTS

The Canadian Audubon Society, by hosting a conference of Affiliations in Winnipeg on May 16, 17, 18, has taken the initiative in exploring ways of setting up the machinery to deal with environmental problems on a national scale. In his opening remarks the chairman, Ian Tate of the CAS, insisted that the rights and purposes of local and provincial organizations of naturalists be maintained but emphasized the need of a national voice for those interested in preserving a quality environment in Canada.

One of the keynote speakers, Dr. Ted Mosqquin, editor of *The Canadian Field - Naturalists,* felt that naturalists could no longer justify communicating mainly among themselves. He expressed the need for a national publication which would have a base broad enough to enable naturalists to communicate with the general public. (His conservative estimate of the potential number of readers of such an organ was between thirty and fifty thousand). He outlined the roles of a national newsletter, a series of nature books, a youth journal and scientific publications with environmental and ecological emphasis. Dr. Mosquin intimated that while the existing naturalist journals *(The Blue Jay, The Canadian Field-Naturalist, The Canadian Audubon,* etc.) have elements of what he envisioned for national publications, no one of them satisfied all the necessary criteria.

Mr. Gerry McKeating, of the Federation of Ontario Naturalists (FON), outlined recent developments in his organization and attributed the rapid growth of the past few years to active involvement at the grass roots level.

Discussion arising from the presentation by Dr. Timothy Meyers of the Biology Department of the University of Alberta led to the conclusion that the existing structure of the CAS would not allow it to assume the position of a national federation unless existing by-law changes occurred. At this point Dr. Meyers stressed the need for immediate action on the part of all concerned naturalists.

The keynote speakers prepared for the deliberations of a committee which in turn presented a number of recommendations. It was proposed that there be regional representation and direct membership. Twelve regions were agreed upon, these to comprise the ten provinces, the Yukon and the North West Territories. Regional federations such as the Saskatchewan Natural History Society would each appoint one director to the Board of Directors. Twelve directors would be elected by the members of regional organizations and twelve would be elected by members of the national organizations. The executive committee would include a president, three vice-presidents (one from each main region of Canada), a secretary, a treasurer, and three members at large. The function of the Board of Directors would be that of policy maker. The central office, manned by an executive director and staff, would conceivably be the centre of activity. A field director would work as a public relations and liaison officer. Membership would be open to all Canadian Naturalists and would entitle a member to receive the national publication as well as the use of the resource centre. It was recommended that the name of a national union of naturalists be *Canadian Nature Federation* with its official publication to be called *Nature Canada.*

These recommendations from the Winnipeg conference were made to the Canadian Audubon Society executive with proposals for setting definite deadlines for guiding future action.

The events of May 16, 17, 18 in Winnipeg are important; the first steps have been taken to fill the need for a national voice for naturalists. Watch the SNHS newsletter for more information concerning specific plans for the formation of a national society. Be prepared to discuss the matter both formally and informally at the annual summer meeting at Waskesiu.—*Gordon Silversides,* President, SNHS, Moose Jaw.

THE SASKATCHEWAN NATURAL HISTORY SOCIETY

BOARD OF DIRECTORS (October, 1969, to October, 1970)

Honorary President	Fred G. Bard, Saskatchewan Museum of Natural History, Regina
President	Gordon Silversides, 1201 Grace Street, Moose Jaw
Past President	W. A. Brownlee, 3628 Mason Avenue, Regina
First Vice-President	J. A. Wedgwood, 610 Leslie Avenue, Saskatoon
Second Vice-President	Jack McKenzie, #307-2720 College Avenue, Regina
Treasurer	George R. Dodd, 33 Malone Crescent, Regina
Corresponding Secretary	Mrs. Leith Knight, 843 Elgin Avenue, Moose Jaw
Recording Secretary	Marie Gillespie, 221 Eleventh Street E., Saskatoon

REPRESENTATIVES AT LARGE

Ron Austin, **Prince Albert**; Harvey Beck, **Calgary**; Tom Gentles, **Regina**; Donald Hayward, **Wolseley**; Ernie Kuyt, **Fort Smith, N.W.T.**; Mrs. Lillian McBean, **Swift Current**; Murdock Nelson, **Moose Jaw**; Robert W. Nero, **Winnipeg**; Frank Roy, **Saskatoon**; C. Shulver, **Lafleche**; Mrs. Mary Skinner, **Indian Head**; Mrs. Sylvia Van Brienen, **Rosetown.**

PRESIDENTS OF LOCAL NATURAL HISTORY SOCIETIES

Miss Keitha Francis, Maple Creek Hospital, **Maple Creek**; Gordon Silversides, 1201 Grace St., **Moose Jaw**; Dr. G. B. Howard, 47 21st E., **Prince Albert**; J. R. Jowsey, 2635 19th Avenue, **Regina**; Ewen Coxworth, **Saskatoon**; Dr. Jan Looman, Experimental Station, **Swift Current**; Frank Switzer, 140 Logan Cres. W., **Yorkton.**

APPOINTED DIRECTORS

Blue Jay Archives: Gary Seib, 1928 Robinson Street, Regina; **Blue Jay Bookshop:** Frank Brazier, 2657 Cameron Street, Regina; **Circulation:** Lorne Scott, Saskatchewan Museum of Natural History, Regina; **Conservation:** Doug Whitfield, 1306 Melrose Avenue, Saskatoon; **Editor of Newsletter:** James Slimmon, 2526 Hanover Avenue, Saskatoon; **Local Societies:** James Wedgwood, 610 Leslie Avenue, Saskatoon; **Office Services:** James Jowsey, 2635 Nineteenth Avenue, Regina; **Publicity:** Ruth Shaw, Yorkton; **Special Publications:** C. Stuart Houston, 863 University Drive, Saskatoon; **Youth:** Frank Switzer, 140 Logan Crescent, Yorkton.

THE BLUE JAY

Blue Jay Editors: George F. Ledingham; **Assistant Editors:** Margaret Belcher, Robert W. Nero; **Junior Naturalists:** Joyce Deutscher.

All items for publication should be submitted to George F. Ledingham, Editor, 2335 Athol Street, Regina.

MEMBERSHIPS

The classes of memberships in the Saskatchewan Natural History Society are as follows: *Regular*, $3.00; *Supporting*, $5.00; *Sustaining*, $10.00. The *Blue Jay* and *Newsletter* are sent without charge to all members not in arrears of dues.

Send all renewals and new memberships to James Jowsey, SNHS, P.O. Box 1121, Regina.

REPRINTS

Requests for quantities of reprints of any article printed in the *Blue Jay* should be sent to Printcraft Ltd., Regina, Sask., within one month of publication. Contributors wishing a few extra copies of the current *Blue Jay* may get them at cost. Requests for these should be made to the Editor when material is submitted for publication.

Second class mail registration number 1046.
Please return unclaimed copies.
Return postage guaranteed.